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THESIS

A PRELIMINARY ANALYSIS OF THE COSTS AND BENEFITS OF OLDER AGE ACCESSIONS

by

Susan D. Barclay

March 1984

Thesis Advisor: George W. Thomas

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A Preliminary Analysis of the Costs and Benefits of Older Age Accessions

by

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Lieutenant, United States Navy
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Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

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ABSTRACT

This thesis examined differences based upon entry age for non-prior service entrants into the military during the All Volunteer Force period in an effort to establish certain costs and benefits which might be attributed to entry age. Entry age groups were defined as 17, 18-20, 21-24, and 25 years and older and were further stratified by branch and sex. Data was supplied by the Defense Manpower Data Center, Monterey. Areas of study included entry age trends, accession quality, utilization, attrition, and marital status. Analysis of the data reveal significant differences among entry age groups as well as differences between males and females and each branch of service.

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I. INTRODUCTION

A. NATURE OF THE PROBLEM

The military is the single largest employer of youth. The military recruiting effort has traditionally focused on the young, inexperienced, unskilled segment of the labor market as its prime source of manpower. Although targeting the 17-21 year olds as the prime recruiting source has proven to be a prolific source of manpower for the various branches of the military, continued reliance on this age group may be a costly mistake. As Figure 1 indicates, the 17-21 year old age group will undergo a significant change through the 1990's as a direct result of the general aging of our society.

Figure 2 indicates other related demographic trends. By 1990, among the age groups shown on Figure 2, the 16-19 year old group will undergo the greatest decrease. The 20-24 year old age group will decrease at a lower rate, and the 25-34 and 35-44 age groups will increase substantially [Ref. 1]. In view of these relative age group growth patterns, targeting the older individual may prove to be a necessity to ensure meeting future requirements.

Thomas (1983) has argued that ample data are available and appropriate methodologies can be developed for estimating a variety of models of the supply of older

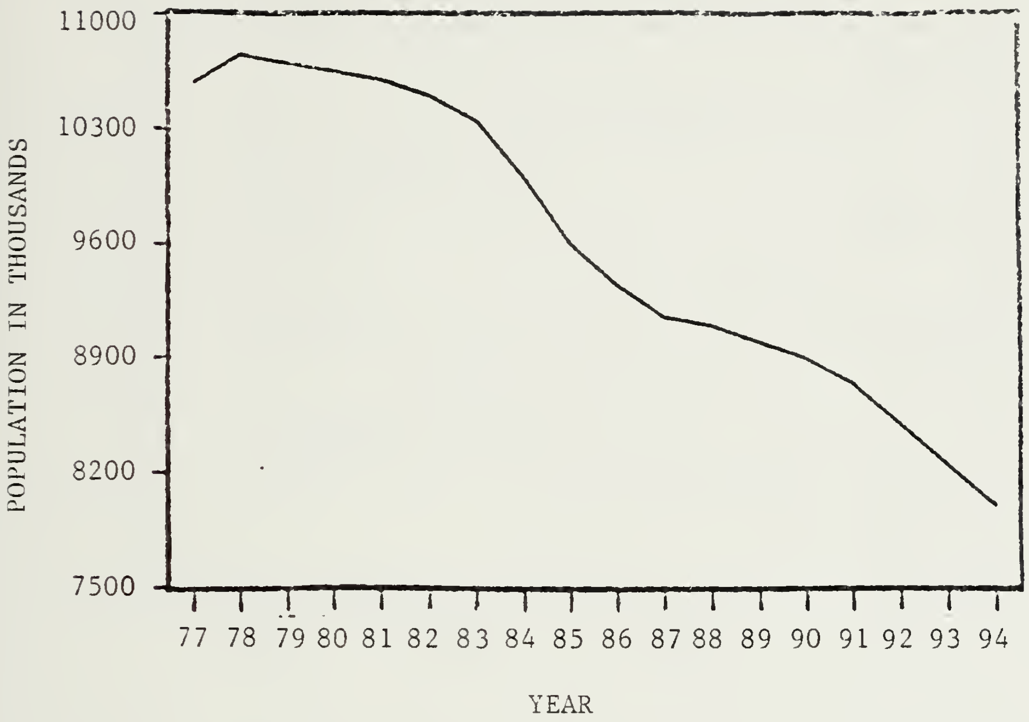

Figure 1 Projection of U.S. 17 Through 21 Year Old Male Population

SOURCE: See Reference 1 for source information

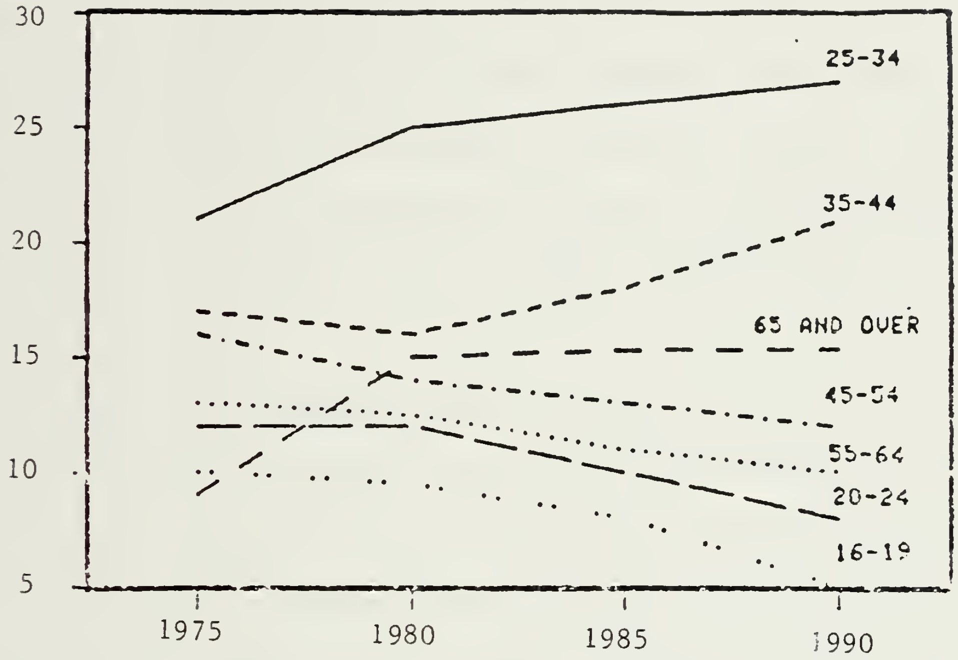

Figure 2 Age Distribution in Total U.S. Population

SOURCE: See Reference 1 for source information.

enlistees [Ref. 2]. Yet the military continues with its reactive feast or famine recruiting policy: This policy reacts to periods of excellent high school recruiting by raising standards and merely riding out the wave of accessions; during periods of high school recruiting shortages, standards are lowered and goals adjusted downward in an effort to "make-do" with what is available. The costs of such a policy are manpower waste and underutilization.

As population demographics change, the military will become further challenged by the task of adequately forecasting and establishing valid manpower requirements within the context of a changing technology, sophisticated weaponry, a precarious economy, and societal perceptions of the military. Not only will the quantity of accessions continue to be a pressing issue, but the quality of accessions will become an issue of even greater importance.

B. BACKGROUND

The individual 21 years and older has never been a major recruiting target. Military advertising campaigns and recruiter canvassing efforts have focused on the young high school graduate who possesses little or no work experience. Therefore older individuals themselves may not be fully aware of the military as a possible career option.

Traditionally, 23-29 year olds have been considered the most productive workers in the economy when compared to those 17-21 years old [Ref. 3]. Numerous studies have indicated that mental ability reaches a peak in early adulthood (the mid-20's) followed by a period of general stability during the middle decades of life [Ref. 4]. It would seem that in view of the enlisted skills shortages that have plagued the military since the advent of the AVF, the older age accession would have been tapped as a valuable recruiting resource long ago. Indeed one study reports that the military's current methods of recruiting candidates for technical ratings has actually contributed to the development of personnel shortages [Ref. 5]. A youthful force generates a relatively high turnover of personnel (on the average the military reconstitutes itself every five years), thus giving rise to a large demand for new recruits each year [Ref. 6].

The recruiting process itself seems to foster age bias. In FY 1977 a study was conducted to measure and assess the recruiting processes of the active duty military. The two major objectives of the study were: (1) to determine how many applicants failed to enter active duty in one of the four branches, how these losses were distributed over the application process, and the characteristics of applicants lost at different stages; (2) to pinpoint differences

between applicants who were lost at each stage and applicants who were accessed.

As Table 1 shows, PQ Losses (Partially Qualified), medical failures, and QNE Losses (Qualified, Not Enlisted) systematically increased with age. Thus the final accession group was somewhat skewed toward 16-18 year olds relative to those initially applying. Since AFQT, failures did not substantially vary by age, the positive relationship between age and PQ losses remained, even when PQ Losses were calculated as a percentage of those mentally qualified (as shown in Table 2). The positive relationship between age and QNE losses also remained even when age-related differences in PQ losses and medical failures were eliminated [Ref. 7].

The category PQ (Partially Qualified) represents a significant loss with respect to the older age accessions. Although these individuals met AFQT standards, they exempted themselves from continuing with the formal enlistment process. In the 25-29 age group, PQ loss and medical failure alone represent a proportion twice that for the 16-18 age group. The QNE category (Qualified, Not Enlisted) represents individuals who have successfully completed the formal enlistment qualification process but who have decided against enlistment. Although this proportion remains small in comparison to PQ losses across all age groups, the proportion of QNE losses for the 22-24 age group is over

Table 1

FY 1977 Applicant Outcomes by Age

Age	Loss by Stage of Recruiting Process in %						Total Accessions (Percent)	Percent of Applicants	Percent of Accessions	Number of Applicants
	AFQT Failure	PQ Loss	Medical Failure	QNE Loss	DEP Loss	Total Losses				
16-18	12.9	17.5	3.3	2.8	2.0	38.6	61.4	54.7	60.5	339,175
19-21	16.2	20.4	4.6	4.0	1.4	46.8	53.2	30.2	28.9	186,957
22-24	14.3	29.7	5.6	6.2	1.4	57.5	42.5	9.8	7.5	60,611
25-29	13.1	36.3	7.2	8.3	1.3	66.4	33.6	4.4	2.7	27,492
30-39	12.9	42.6	9.2	10.7	1.3	76.8	23.2	0.9	0.4	5,568

SOURCE: See Reference 7 for source information.

Table 2

FY 1977 Applicant Cohort: Loss As a Percentage of Those Remaining in Pool by Age for DOD Males

Age	PQ Loss As Percent of All Those Mentally Qualified	QNE Loss As Percent of All Those Fully Qualified
16-18	20.1	6.7
19-21	24.4	6.7
22-24	34.7	12.3
25-29	41.7	19.1
30-39	48.9	30.3

SOURCE: See Reference 7 for source information.

twice that for the 16-18 age group and continues to rise to nearly 11.0% for the 30-39 age group.

Although these losses are largely ignored by OSD and the branches, they represent a serious drain from a potentially valuable recruiting resource. Granted older individuals have neither applied, nor enlisted, in the substantial numbers that would be necessary to support extensive recruiting campaigns. Thus older age accessions have been considered a costly commodity in exchange for the supposedly minimal returns that would be expected. Yet in view of the demographic trends now being exhibited, the relative cost of attracting the older age accession may decrease substantially when compared to the cost of recruiting from a diminishing pool of 17-21 year olds.

This study will examine the difference between four non-prior service entry age groups in an effort to establish certain costs and benefits which might be attributed to the expanded accession into the military of older individuals. Chapters II through VI discuss the findings of the study with respect to age trends, accession quality, utilization, attrition, and marital status. Chapter VII analyzes the costs and benefits of older age accessions and Chapter VIII summarizes the findings of this study.

C. DATA BASES AND ANALYSIS

Information for this study was supplied by the Defense Manpower Data Center (DMDC), Monterey upon request utilizing

the Active Duty Cohort and Master File data bases from fiscal year 1973 through fiscal year 1983. The Active Duty Cohort File provided the following information on non-prior service members stratified by age at entry, sex, and branch: Age trends, educational achievement, advanced placement, mental group distribution, occupational distribution, term of enlistment, and attrition. The Active Duty Master File provided aggregate non-prior service and prior service information on marital status stratified by entry age, length of service, sex, and branch. Entry age groups were defined as 17, 18-20, 21-24 and 25 years and older.

II. AGE TRENDS WITHIN THE MILITARY

A. AVERAGE AGE TRENDS

The average age of individuals enlisting in the military has risen from 19 years to 19.5 years during the last decade. Average entry age for DOD has been steadily increasing for all years of the AVF as reflected in Table 3. This increase in entry age has been occurring even though from FY 1973 through FY 1979 the size of the "usual" entry age pool (17-20) was increasing relative to accession levels.

When looked at within the context of individual branches, several interesting and disparate age trends appear. Branch specific average age trends are presented in Tables 4 through 7. The most dramatic increase in average entry age was demonstrated by the Navy (Table 5) with an increase of nearly a year. While the Army (Table 4) did not experience as dramatic a rise in entry age, the average entry age for the Army in FY 1973 surpassed that of the Air Force (Table 6) for the same year. The Air Force maintains, at present, the highest average entry age of all the branches. The Marine Corps (Table 7), which began with the lowest average accession age of all the branches in 1973, remains the branch with the lowest average accession age.

Within DOD, females maintain a higher entry age than their male counterparts (Table 3). Women entering military

Table 3

DOD Average Entry Age by Sex

FY 1973-FY 1983

	Total	Sex	
		Male	Female
1973	19.1	19.1	19.5
1974	18.8	18.8	19.7
1975	18.9	18.9	19.6
1976	18.9	18.9	19.7
1977	18.9	18.9	19.7
1978	19.0	18.9	19.7
1979	19.0	18.9	19.7
1980	19.1	19.0	19.7
1981	19.2	19.2	19.7
1982	19.4	19.3	19.8
1983	19.5	19.5	20.0

SOURCE: DMDC, Monterey

Table 4

Army Average Entry Age by Sex

FY 1973-FY 1983

	Total	Sex	
		Male	Female
1973	19.3	19.3	19.5
1974	18.9	18.8	19.7
1975	19.0	18.9	19.7
1976	19.0	18.9	19.7
1977	19.0	18.9	19.7
1978	19.1	19.1	19.7
1979	19.1	19.1	19.6
1980	19.1	19.1	19.7
1981	19.3	19.2	19.6
1982	19.4	19.4	19.9
1983	19.5	19.4	20.0

SOURCE: DMDC, Monterey

Table 5

Navy Average Entry Age by Sex

FY 1973-FY 1983

		Sex	
	Total	Male	Female
1973	18.8	18.7	19.5
1974	18.7	18.6	19.5
1975	18.8	18.8	19.5
1976	18.9	18.9	19.5
1977	18.9	18.9	19.7
1978	18.9	18.8	19.6
1979	18.9	18.9	19.6
1980	19.1	19.0	19.6
1981	19.2	19.1	19.8
1982	19.4	19.3	20.0
1983	19.6	19.5	20.1

SOURCE: DMDC, Monterey

Table 6

Air Force Average Entry Age by Sex

FY 1973-FY 1983

		Sex	
	Total	Male	Female
1973	19.2	19.2	19.6
1974	19.1	19.0	19.8
1975	19.3	19.2	19.7
1976	19.2	19.2	19.7
1977	19.2	19.1	19.8
1978	19.2	19.1	19.8
1979	19.2	19.1	19.9
1980	19.4	19.3	19.9
1981	19.5	19.5	19.7
1982	19.6	19.6	19.8
1983	19.8	19.8	19.9

SOURCE: DMDC, Monterey

Table 7

Marine Corps Average Entry Age by Sex

FY 1973-FY 1983

	Total	Sex	
		Male	Female
1973	18.6	18.6	19.2
1974	18.6	18.5	19.2
1975	18.6	18.6	19.0
1976	18.6	18.6	19.1
1977	18.7	18.7	19.2
1978	18.8	18.7	19.2
1979	18.7	18.7	19.0
1980	18.8	18.8	19.1
1981	18.8	18.8	19.2
1982	18.8	18.8	19.2
1983	18.9	18.9	19.3

SOURCE: DMDC, Monterey

service during FY 1983 reflect an average age of 20 as compared to 19.5 for the males. However, both sexes reflect comparative advancing age trends within DOD over the AVF years.

Within the Army and Navy (Tables 4 and 5), age trends for females are strikingly similar. For males, the Army's average age rose .1 year, while the Navy rose .8 year (even after both experienced the characteristic average entry age low in FY 1974). The Air Force females (Table 6) are, surprisingly, still just under the 20 year mark. The Air Force does maintain presently the highest average entry age for males within all branches. The Marine Corps (Table 7), which had the youngest male and female entrants within all branches, still maintains that status.

B. ENTRY AGE DISTRIBUTIONS

1. DOD Entry Age Distribution Trends

Within DOD a substantial shift in entry age distribution has taken place. Analysis on entry age trends within DOD for the past decade, as reflected in Table 8, indicate a substantial shift from the younger entrant to the older age groups. The demand for accessions has dropped over 25% between FY 1973 and FY 1983 with the total number of accessions for DOD going from 405,650 to 298,957, respectively. In that same period, the proportion of accessions

Table 8

DOD Entry Age Demographics in %

Age	FY 1973	FY 1977	FY 1980	FY 1983
17	19.5	17.8	14.5	6.4
18-20	68.7	63.8	64.7	67.0
21-24	10.7	14.8	16.3	20.3
25+	1.3	3.8	4.7	6.5
N	405,650	376,483	355,525	298,957

SOURCE: DMDC, Monterey for all tables in this section.

in the 21-24 age group has increased almost 100% from 10.7% in 1973 to 20.3% in 1983. Additionally, the proportion of accessions in the 25 years and older age group has increased a factor of five from 1.3% in FY 1973 to 6.5% in FY 1983. While the proportion of 18-20 year old entrants has dropped somewhat, the most dramatic change in recruitment can be seen in the 17 year old cohort: In FY 1973 nearly 20% of the military accessions were 17 years old; in FY 1983 that proportion has dropped to 6.4%.

The same shift in age distribution for DOD can be seen throughout each of the branches, although several differences do become more apparent.

2. Branch Age Distribution Trends

Table 9 shows the branch specific age demographics for FY 1973 and FY 1983. The Army, Navy, and Air Force have much the same age trends, although the Navy has shown the most dramatic shift away from accession of 17 year olds to 21 years and older. In contrast to the other services, the Marine Corps accessed a greater proportion of 18-20 year olds in FY 1983 than they did in FY 1973. Even though the Marine Corps is comprised of proportionately fewer 17 year olds, the shift to the 21-24 and 25 years and older age groups has not been nearly as dramatic as that evidenced by the other services.

In FY 1973 the 18-20 year old group comprised the largest proportion of Air Force entrants and exceeded that

Table 9

Branch Age Demographics in %

	FY 1973				FY 1983			
Age	Army	Navy	Air Force	Marines	Army	Navy	Air Force	Marines
17	19.8	23.3	10.1	28.6	7.5	5.9	3.0	8.9
18-20	67.5	68.4	74.4	62.2	64.9	66.9	66.5	76.1
21-24	11.2	7.7	14.2	8.3	20.0	20.4	25.3	12.9
25+	1.6	0.8	1.5	1.1	7.8	7.1	5.4	2.3
N	169,517	93,648	93,539	48,946	131,974	71,606	59,787	35,590

proportion of 18-20 year olds accessed by the other branches. In FY 1973 the Marine Corps recruited a proportion of 17 year olds that was nearly 29%. While the Air Force has now shifted to take the lead among the services in the proportion of 21-24 year old entrants, the Marine Corps has shifted to take the lead in the recruiting of 18-20 year olds. In the past decade, the Marines have experienced a 19.7% drop in the proportion of 17 year old accessions, followed closely by the Navy with a 17.4% drop.

3. Age Distribution by Sex

Table 10 represents branch age distributions by sex. The age trends for DOD discussed previously hold true for the males, however, females are experiencing age trends that are quite dissimilar from the males.

While FY 1983 DOD accessions of 17 year old males represents a downward trend for this age group, the females are experiencing an upward trend in recruitment of 17 year olds. However, this upward trend must be kept in perspective. The proportion of 17 year old females who were accessed in FY 1973 was extremely small, thus the acceleration of 17 year old entrants during the past decade is merely bringing this age group closer to parity with the 17 year old male accession proportion. While the proportion of male 18-20 year old accessions has held fairly steady for the past decade, there has been a significant drop in the proportion of female accessions for the same

Table 10

Branch Age Demographics by Sex in %

	FY 1973					FY 1983				
Sex/Age	DOD	Army	Navy	Air Force	Marine Corps	DOD	Army	Navy	Air Force	Marine Corps
Male										
17	20.4	20.8	24.5	10.8	29.0	6.6	7.0	6.2	2.9	8.9
18-20	68.2	67.1	67.8	74.4	61.8	67.8	65.9	67.6	67.0	76.6
21-24	10.2	10.7	7.1	13.5	8.2	19.7	19.8	19.7	24.9	12.4
25+	1.2	1.4	0.6	1.3	1.0	5.9	7.3	6.5	5.2	2.1
N	385,335	161,181	88,699	87,200	48,255	263,838	115,475	63,467	51,260	33,636
Female										
17	1.9	2.0	1.8	0.0	6.0	4.1	4.1	2.6	3.4	6.6
18-20	71.7	72.4	74.6	71.0	70.4	59.3	56.9	60.6	62.7	68.3
21-24	20.7	19.6	20.0	23.2	17.6	25.5	24.7	25.0	27.3	18.1
25+	5.7	6.0	3.6	5.8	6.0	11.1	14.3	11.8	6.9	7.0
N	20,315	8,336	4,949	6,339	691	35,119	16,499	8,139	8,527	1,954

time period from 71.7% to 59.3%. In FY 1973 females 21-24 years old were accessed at twice the proportion of that for the males. Yet, while the female proportion has increased from 20.7% in FY 1973 to 25.5% in FY 1983, the male proportion has nearly doubled from 10.2% in FY 1973 to 19.7% in FY 1983. For FY 1983, DOD accessed females who were 25 years and older at twice the proportion of males.

DOD trends are reflected within the separate branches although exceptions do exist. During FY 1983, the Air Force accessed much the same proportions for both males and females within each of the age groups although the proportion of 17 year old female accessions was higher than that of the males. This, in itself, represents a dramatic increase from FY 1973 because the Air Force was the only branch who did not access any 17 year old females in FY 1973. For all other branches, the proportion of 17 year old female accessions for FY 1983 was much less than that of the males.

III. ACCESSION QUALITY

A. EDUCATION LEVEL

1. DOD Average Years of Education

Table 11 presents the DOD average years of education of enlistees by entry age for FY 1973 through FY 1983. Within this period, DOD has been experiencing a trend towards higher levels of education among its accessions. For 17 year old accessions, the trend is particularly important as the increase in average years of education for this age group was nearly a full year.

Table 12 presents DOD average years of education at enlistment by sex from FY 1973 through FY 1983. Educational levels of female accessions exceeded that of male accessions, throughout the period. While 17 year old female accessions have held fairly steady at 12.0 years of education throughout the past decade, 17 year old male accessions have increased their educational level by .8 years. The male 25 years and older entry age group has also made a comparatively important advance of .7 years of education, bringing them up to educational parity with the females of the same age group.

2. Branch Average Years of Education

Tables 13 through 16 present branch specific average years of education by entry age. The Marine Corps has made

Table 11

DOD Average Years of Education by Entry Age

FY 1973-FY 1983

			Age		
Year	17	18-20	21-24	25+	Total
1973	10.6	11.7	12.8	12.5	11.6
1974	10.7	11.5	12.2	12.3	11.5
1975	10.9	11.6	12.2	12.6	11.6
1976	10.8	11.7	12.2	12.6	11.6
1977	10.9	11.7	12.1	12.5	11.6
1978	11.1	11.8	12.3	12.8	11.8
1979	11.2	11.7	12.2	12.7	11.7
1980	10.8	11.6	12.0	12.5	11.6
1981	11.1	11.8	12.3	12.8	11.9
1982	11.3	11.9	12.4	12.9	12.0
1983	11.5	11.9	12.5	13.1	12.1

SOURCE: DMDC, Monterey

Table 12

DOD Average Years of Education by Sex and Entry Age

FY 1973-FY 1983

	Male					Female				
Year	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
1973	10.6	11.6	12.8	12.4	11.6	12.0	12.1	12.8	12.9	12.3
1974	10.7	11.5	12.1	12.1	11.4	11.8	12.0	12.7	12.8	12.2
1975	10.8	11.6	12.2	12.5	11.6	11.8	12.0	12.7	12.8	12.2
1976	10.8	11.7	12.1	12.5	11.6	11.9	12.0	12.6	12.8	12.2
1977	10.8	11.7	12.0	12.4	11.6	11.8	12.0	12.5	12.7	12.1
1978	11.1	11.7	12.3	12.7	11.7	11.7	12.0	12.6	13.0	12.2
1979	11.1	11.6	12.1	12.7	11.7	11.8	12.0	12.6	12.9	12.2
1980	10.7	11.5	11.9	12.4	11.5	11.6	11.9	12.4	12.8	12.1
1981	11.0	11.8	12.3	12.8	11.8	11.7	12.0	12.5	12.9	12.2
1982	11.2	11.9	12.4	12.9	11.9	11.9	12.1	12.7	13.1	12.3
1983	11.4	11.9	12.5	13.1	12.1	12.0	12.1	12.9	13.2	12.4

SOURCE: DMDC, Monterey

Table 13

Army Average Years of Education by Entry Age

FY 1973-FY 1983

			Age		
Year	17	18-20	21-24	25+	Total
1973	10.4	11.5	12.7	12.2	11.5
1974	10.5	11.3	11.8	12.0	11.3
1975	10.7	11.5	12.1	12.4	11.5
1976	10.5	11.5	12.0	12.4	11.4
1977	10.5	11.5	11.9	12.3	11.4
1978	11.1	11.7	12.2	12.7	11.7
1979	11.3	11.5	11.9	12.4	11.6
1980	10.4	11.3	11.6	12.0	11.2
1981	10.9	11.8	12.2	12.7	11.8
1982	11.3	11.9	12.3	12.9	12.0
1983	11.3	11.9	12.4	13.0	12.0

SOURCE: DMDC, Monterey

Table 14

Navy Average Years of Education by Entry Age

FY 1973-FY 1983

	Age				
Year	17	18-20	21-24	25+	Total
1973	10.7	11.8	12.9	12.6	11.7
1974	10.8	11.8	12.6	12.7	11.6
1975	11.0	11.8	12.5	12.9	11.7
1976	11.2	11.8	12.1	12.7	11.8
1977	11.0	11.7	12.1	12.5	11.7
1978	11.0	11.8	12.5	12.8	11.8
1979	10.9	11.8	12.3	12.7	11.7
1980	10.9	11.7	12.1	12.5	11.7
1981	11.0	11.8	12.2	12.6	11.8
1982	11.0	11.8	12.2	12.7	11.8
1983	11.5	11.9	12.4	12.9	12.1

SOURCE: DMDC, Monterey

Table 15

Air Force Average Years of Education by Entry Age

FY 1973-FY 1983

Year	17	18-20	Age 21-24	25+	Total
1973	11.4	11.9	13.2	13.4	12.0
1974	11.4	11.9	12.8	13.3	12.0
1975	11.5	11.9	12.5	13.0	12.0
1976	11.8	12.0	12.5	12.9	12.1
1977	11.8	12.0	12.4	12.8	12.0
1978	11.5	11.9	12.5	13.1	12.0
1979	11.5	11.9	12.6	13.4	12.1
1980	11.5	11.9	12.6	13.5	12.1
1981	11.6	11.9	12.7	13.6	12.1
1982	11.9	12.0	12.8	13.7	12.2
1983	12.0	12.1	13.0	13.9	12.4

SOURCE: DMDC, Monterey

Table 16

Marine Corps Average Years of Education by Entry Age

FY 1973-FY 1983

		Age			
Year	17	18-20	21-24	25+	Total
1973	10.4	11.3	11.6	11.3	11.1
1974	10.5	11.3	11.7	11.6	11.1
1975	10.6	11.5	11.7	11.9	11.3
1976	10.8	11.6	12.0	12.4	11.5
1977	11.0	11.7	12.2	12.4	11.6
1978	11.0	11.7	12.1	12.4	11.6
1979	11.0	11.7	12.1	12.4	11.6
1980	11.1	11.8	12.0	12.4	11.7
1981	11.2	11.8	12.1	12.5	11.8
1982	11.4	11.9	12.2	12.6	11.9
1983	11.6	11.9	12.4	12.8	12.0

SOURCE: DMDC, Monterey

the greatest improvement overall (.9 years), and within each age group. Within all branches, 17 year old accessions have increased their levels of education, but the Marine Corps has experienced the most substantial years of education gains for this age group with a 1.2 years increase, followed by the Army with 1.9 years increase in average years of education. The educational gains have not been as substantial for the 18-20 year old accessions, with the exception of the Marines, who have experienced a .6 years increase. While the Army, Navy and Air Force have all experienced a decrease in the average years of education for 21-24 year old accessions, the 21-24 year old Marine Corps accessions have increased by .8 years bringing it up to parity with the Army and Navy for this age group. While the Marine Corps still has the lowest level of education for accessions 25 years and older, they have also made the greatest gains within this age group (1.5 years).

Tables 17 through 20 present branch average years of education by sex and age. In every branch female accessions maintain a lead in educational levels although the margin is narrowing as male accessions continue to make impressive educational gains. FY 1983 17 year old female accessions are maintaining FY 1973 educational levels of 12.0 years although there have been dips to as low as 11.4 years within the Army during the past ten years. Seventeen year old male accessions have made impressive gains with

Table 17

Army Average Years of Education by Sex and Entry Age

FY 1973-FY 1983

	Male					Female				
Year	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
1973	10.4	11.5	12.7	12.1	11.4	12.0	12.1	12.7	12.7	12.2
1974	10.5	11.3	11.7	11.7	11.2	11.8	12.0	12.6	12.7	12.2
1975	10.7	11.4	12.0	12.3	11.4	11.9	12.0	12.8	12.8	12.2
1976	10.5	11.4	11.9	12.3	11.4	11.8	12.0	12.7	12.8	12.2
1977	10.5	11.5	11.9	12.3	11.4	11.7	12.0	12.5	12.7	12.1
1978	11.1	11.6	12.0	12.5	11.7	11.9	12.0	12.7	13.0	12.3
1979	11.2	11.4	11.8	12.2	11.5	12.0	12.0	12.6	12.8	12.2
1980	10.3	11.2	11.5	11.9	11.1	11.4	11.9	12.2	12.5	12.0
1981	10.8	11.7	12.1	12.6	11.7	11.7	12.0	12.5	12.8	12.2
1982	11.2	11.8	12.3	12.8	11.9	12.0	12.1	12.8	13.1	12.4
1983	11.3	11.9	12.3	13.0	12.0	12.0	12.1	12.8	13.1	12.4

SOURCE: DMDC, Monterey

Table 18

Navy Average Years of Education by Sex and Entry Age

FY 1973-FY 1983

	Male					Female				
Year	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
1973	10.7	11.8	13.0	12.5	11.6	12.0	12.1	12.8	12.9	12.3
1974	10.8	11.8	12.5	12.6	11.5	12.0	12.1	12.9	12.9	12.3
1975	10.9	11.8	12.5	12.9	11.7	12.0	12.1	12.8	12.9	12.3
1976	11.2	11.8	12.1	12.7	11.7	11.9	12.0	12.4	12.6	12.1
1977	11.0	11.7	12.1	12.5	11.6	11.8	12.0	12.3	12.6	12.1
1978	11.0	11.8	12.4	12.8	11.7	11.6	12.0	12.7	13.0	12.2
1979	10.9	11.7	12.3	12.7	11.7	11.7	11.9	12.5	12.8	12.1
1980	10.8	11.7	12.1	12.5	11.7	11.7	11.9	12.4	12.6	12.1
1981	10.9	11.7	12.1	12.5	11.7	11.8	12.0	12.5	12.8	12.2
1982	11.0	11.8	12.1	12.6	11.8	11.7	12.0	12.6	12.9	12.2
1983	11.4	11.9	12.3	12.8	12.0	12.0	12.1	12.7	13.1	12.3

SOURCE: DMDC, Monterey

Table 19

Air Force Average Years of Education by Sex and Entry Age

FY 1973-FY 1983

	Male					Female				
Year	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
1973	11.4	11.9	13.2	13.5	12.0	0.0	12.1	13.0	13.3	12.3
1974	11.4	11.9	12.7	13.4	12.0	11.6	12.0	12.8	13.1	12.3
1975	11.5	11.9	12.4	13.1	12.0	11.7	11.9	12.5	12.7	12.1
1976	11.7	12.0	12.4	13.0	12.1	11.9	12.0	12.6	12.6	12.2
1977	11.8	12.0	12.3	12.8	12.0	11.8	12.0	12.5	12.8	12.2
1978	11.5	11.9	12.5	13.2	12.0	11.6	11.9	12.5	12.9	12.1
1979	11.5	11.9	12.6	13.7	12.0	11.6	11.9	12.6	13.0	12.2
1980	11.5	11.9	12.6	13.7	12.0	11.6	11.9	12.6	13.3	12.2
1981	11.6	11.9	12.7	13.7	12.1	11.7	12.0	12.6	13.4	12.2
1982	11.9	12.0	12.8	13.7	12.2	11.9	12.1	12.8	13.4	12.3
1983	12.0	12.0	12.9	13.9	12.4	12.0	12.1	13.0	13.6	12.4

SOURCE: DMDC, Monterey

Table 20

Marine Corps Average Years of Education by Sex and Entry Age

FY 1973-FY 1983

	Male					Female				
Year	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
1973	10.4	11.3	11.6	11.3	11.1	12.0	12.0	12.7	12.4	12.2
1974	10.5	11.3	11.6	11.5	11.1	0.0	12.0	12.9	13.0	12.2
1975	10.6	11.4	11.7	11.8	11.2	11.9	12.0	12.8	13.2	12.2
1976	10.8	11.6	12.0	12.3	11.4	11.8	12.1	12.8	13.1	12.2
1977	11.0	11.7	12.1	12.3	11.6	11.9	12.1	12.8	13.1	12.2
1978	11.0	11.7	12.0	12.3	11.6	11.7	12.0	12.5	12.8	12.1
1979	11.0	11.7	12.0	12.3	11.6	12.0	12.0	12.6	13.1	12.2
1980	11.1	11.8	12.0	12.3	11.7	12.0	12.0	12.5	13.0	12.2
1981	11.2	11.8	12.1	12.4	11.7	12.0	12.1	12.7	13.1	12.2
1982	11.3	11.9	12.1	12.5	11.8	12.0	12.1	12.8	13.3	12.3
1983	11.6	11.9	12.3	12.7	12.0	12.0	12.1	12.9	13.0	12.3

SOURCE: DMDC, Monterey

the Marine Corps leading all branches with a gain of 1.2 years. The 18-20 year old accessions have held fairly steady for both males and females within all branches except for the Marine Corps males whose average educational level has advanced .6 years. For all branches, 21-24 year old male accessions have dropped in educational levels, with the exception of the Marine Corps which has risen .7 years. Except for the Navy which has dropped from FY 1973 levels, all branches of 21-24 year old female accessions have either held steady or made slight gains in average education levels.

All of the branches have experienced an increase in education levels for the male 25+ accessions, but the Marine Corps has experienced the greatest increase with 1.4 years (even though they are still below education levels for the other branches). Marine Corps females 25 years and older have gained .6 years and, even though they had a lower education level than the same entry age group in the Army and Navy in FY 1973, the oldest entry age Marine Corps females now stand at just .1 years below their Army and Navy counterparts.

B. EDUCATIONAL DEGREE ATTAINMENT

The most traditional measurement of input quality to the military has been the percentage of entrants who possess·a high school degree. No other predictor of

military performance is relied upon as heavily as the high school diploma, and with good reason: High school graduates represents lower rates of attrition, a higher level of maturity, and accelerated training time when compared to their peers who have not completed high school. Even entrants with a GED have been found to display behavior that is more closely related to non-high school graduates rather than high school graduates. This section discusses highest educational degree attainment at time of entry.

1. DOD Trends 1973-1983

Table 21 presents the DOD educational degree distribution by entry age and sex for FY 1973 and 1983. Females continued to maintain significantly high proportions of high school graduates who have also completed some or all of a college degree. In FY 1983, 26.0% of the females 25 years and older had completed some college while an additional 18.1% had attained a college degree. Although female 21-24 year olds had a much lower proportion of college graduates, 27.1% had completed some college. Females 17 and 18-20 years old have reflected a decrease in entrants with some college in favor of a greater proportion who are high school graduates. All female entry age groups have experienced a significant decrease in the levels of non-high school graduates who have entered the military.

Table 21

DOD Educational Degree Distribution by Entry Age and Sex in %

for FY 1973 and FY 1983

Year/ Degree Level	Male					Female				
1973	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
No Degree	72.1	27.8	18.9	30.3	36.0	4.0	4.5	5.6	11.2	5.1
High School	28.0	65.3	41.8	38.3	55.0	92.0	87.2	59.3	52.9	79.7
Some College	0.1	7.1	22.6	13.4	7.3	4.0	8.4	24.2	19.0	12.2
BA/BS+	0.1	0.1	17.0	18.3	2.0	0.0	0.1	11.0	17.1	3.2
Total Degree	28.0	72.3	81.2	69.8	64.1	96.0	95.6	94.5	88.9	95.0
N	21,998	190,152	31,836	2,956	246,942	24	14,417	3,951	905	19,297
1983										
No Degree	33.8	8.3	8.8	7.9	10.1	0.1	0.4	0.4	0.4	0.4
High School	66.3	88.7	65.2	51.6	80.5	99.6	93.0	63.1	55.7	81.7
Some College	0.1	3.1	19.8	21.7	7.2	0.5	6.7	27.1	26.0	13.7
BA/BS+	0.1	0.1	6.3	18.9	2.4	0.0	0.1	9.5	18.1	4.4
Total Degree	66.3	91.8	91.3	92.2	90.0	100.0	99.7	99.7	99.7	99.7
N	11,647	164,293	47,143	14,250	237,333	1,408	20,978	8,774	3,845	35.005

SOURCE: DMDC, Monterey

Unlike the females, males have experienced more dramatic changes in entry age educational demographics since FY 1973. In FY 1983, the proportion of non-high school degree entrants had decreased by 25%. Although only 66.3% of the 17 year olds accessed in FY 1983 were high school graduates, this percentage represents a proportional increase of nearly 40% since FY 1973. In FY 1983 nearly 89% of the 18-20 year old males had high school diplomas upon entry. Males 21-24 years old have experienced a decrease in the proportion of entrants with college experience or diplomas by nearly 18.0% since FY 1973 in favor of more high school graduates. Males 25 years and older represented a significant decrease since FY 1973 in non-high school graduates in favor of a higher proportion of entrants with a high school diploma and some college.

2. Branch Trends 1973-1983

Table 22 presents the Army educational distribution by entry age and sex for FY 1973 and 1983. Nearly 100% of the females possessed high school diplomas with college experience or degrees as compared to Army males with nearly 86.0%. Of the females 25 years and older, 18.2% possessed a college degree upon entry. Of the 21-24 year old females, nearly 11.0% had completed college while nearly 25.0% had some college. Both age groups represented significant decreases in the proportion of non-high school entrants.

Table 22

Army Educational Degree Distribution by Entry Age and Sex in %

for FY 1973 and FY 1983

Year/ Degree Held	Male					Female				
1973	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
No Degree	81.0	35.1	24.1	37.3	43.5	0.0	9.1	11.9	19.4	10.2
High School	18.9	56.9	36.6	35.0	46.6	100.0	81.2	54.0	48.7	73.9
Some College	0.1	8.1	22.5	13.3	8.0	0.0	9.9	26.3	18.6	13.6
BA/BS+	0.1	0.1	17.1	14.7	2.1	0.0	0.1	8.0	13.6	2.5
Total Degree	19.0	65.0	76.1	62.8	56.6	100.0	91.0	88.2	80.7	89.9
N	6,342	70,281	13,143	1,363	91,129	19	5,608	1,457	405	7,489
1983										
No Degree	41.7	11.8	12.6	10.2	14.2	0.0	0.1	0.2	0.2	0.1
High School	38.3	85.7	64.5	51.5	77.1	99.7	93.7	64.6	58.2	82.0
Some College	0.1	2.6	17.8	20.4	6.6	0.4	6.3	24.7	23.5	12.9
BA/BS+	0.1	0.1	5.3	18.0	2.3	0.0	0.1	10.7	18.2	5.1
Total Degree	58.4	88.3	87.5	89.9	85.9	100.0	100.0	99.9	99.9	100.0
N	5,323	67,136	19,448	7,225	99,132	756	9,451	4,037	2,241	16,485

SOURCE: DMDC, Monterey

For the 18-20 year old females, the proportions of non-high school graduates and those with some college have decreased since FY 1973 in favor of a higher proportion of high school graduates. In contrast, seventeen year old females represented a small proportional increase in entrants who had some college as well as a high school diploma.

Although Army males have experienced significant increases in entry level educational attainment since FY 1973, they continue to represent the lowest proportions of degreed members within all branches. Although 17 year old males have decreased the proportion of non-high school degree entrants by half since FY 1973, only 38.3% of the FY 1983 accessions within this entry age group possessed a high school diploma. Following the DOD trend for 18-20 year old males, Army males of the same age group have decreased the proportions of non-high school graduates and those with some college in favor of a higher proportion of high school graduates during FY 1983. The 21-24 year old males have experienced a significant decrease in college level entrants as the proportion of high school graduates for this age group has increased. Of the male entrants 25 years and older, 20.4% had some college while 18.0% had a college degree which represented the highest Army male entry age proportion of combined college experience.

Table 23 presents the Navy educational degree distribution by entry age and sex for FY 1973 and 1983. Although females still exceeded the males in educational attainment at entry for FY 1983, males have decreased the proportion of non-high school graduates by 20% so that the overall male and female proportion of entrants with degrees has achieved comparability. Females 25 years and older have increased the proportion of entrants with some college and college degrees by 5.2% since FY 1973 but also accepted a small proportion (.4%) of non-high school graduates in FY 1983. Females 21-24 years old decreased by nearly 6% the proportion of entrants with some college in favor of a comparable increase in the proportion of high school graduates. A 5% decrease in the proportion of entrants with some college was also experienced by the 18-20 year old females. The only female entry age group that did not access non-high school graduates was the 17 year olds. This entry age group represented a decrease in the proportions of non-high school graduates as well as those with some college in favor of a higher proportion of high school graduates. Males 25 years and older represented a small decrease in the proportion of college graduates in favor of a higher proportion of entrants with some college. Non-high school graduates accounted for nearly 8.0% of this age group which was the lowest proportion of non-high school graduates for any Navy male entry age group. Males

Table 23

Navy Educational Degree Distribution by Entry Age and Sex in %

for FY 1973 and FY 1983

Year/ Degree Held	Male					Female				
	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
1973										
No Degree	65.9	20.1	12.6	21.9	30.8	25.0	0.3	0.2	0.0	0.3
High School	34.2	71.7	40.5	43.9	60.1	50.0	89.7	63.4	61.6	83.6
Some College	0.1	8.3	33.2	19.6	8.1	25.0	10.2	31.4	27.3	14.9
BA/BS+	0.0	0.1	13.9	14.8	1.1	0.0	0.0	5.2	11.3	1.4
Total Degree	34.2	80.0	87.5	78.2	69.3	75.0	99.8	99.9	100.0	99.8
N	7,436	48,081	5,454	419	61,390	3	3,802	964	169	4,938
1983										
No Degree	33.0	8.4	9.5	7.7	10.1	0.0	0.3	0.1	0.4	0.2
High School	67.1	89.1	70.0	59.0	82.1	99.6	94.9	68.4	56.0	83.9
Some College	0.0	2.6	17.8	22.0	6.7	0.5	5.0	25.8	30.5	13.1
BA/BS+	0.0	0.1	2.9	11.5	1.4	0.0	0.0	5.9	13.3	3.0
Total Degree	67.1	91.7	90.6	92.4	90.0	100.0	99.8	100.0	99.7	99.9
N	2,630	39,370	11,326	3,789	57,115	235	4,899	2,059	931	8,124

SOURCE: DMDC, Monterey

21-24 have experienced a significant decrease in the proportion of entrants with some college or a college degree. However, this age group has increased the proportion of high school graduates from 40.5% in FY 1973 to 70% in FY 1983. Of the 18-20 year old males, 89.1% had high school diplomas at entry yet this age group experienced a decrease by nearly 6% of entrants with some college. Although the proportion of 17 year old male entrants with a high school diploma has increased from 34.2% in FY 1973 to 67.1% in FY 1983, non-high school graduates accounted for 33.0% of this entry age group.

Table 24 presents the Air Force educational degree distribution by entry age and sex for FY 1973 and 1983. In FY 1983, both males and females had comparably high proportions of entrants with degrees. Since FY 1973, female entrants 25 years and older have maintained a consistently high proportion of entrants with college degrees but have nearly doubled the proportion of entrants who had some college. Females 21-24 have decreased the proportion of high school and college graduates in favor of increasing the proportion of entrants with some college to 31.9%. In FY 1983, 90.2% of the female entrants 18-20 years old had high school diplomas, but nearly 9.0% had some college which represented an increase since FY 1973. The Air Force did not access any 17 year old females in FY 1973, however,

Table 24

Air Force Educational Degree Distribution by Entry Age and Sex in %

for FY 1973 and FY 1983

Year/ Degree Held	Male					Female				
1973	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
No Degree	38.6	14.4	7.5	11.5	16.0	0.0	1.7	2.3	4.9	2.0
High School	61.4	80.5	49.7	40.6	73.8	0.0	93.3	62.8	53.7	84.2
Some College	0.1	5.2	19.8	13.4	6.8	0.0	5.0	16.4	15.0	8.1
BA/BS+	0.0	0.1	23.2	34.7	3.6	0.0	0.1	18.8	26.6	5.8
Total Degree	61.5	85.7	92.6	88.6	84.1	0.0	98.4	97.8	95.2	98.1
N	5,775	55,640	10,904	932	73,251	0	4,470	1,431	312	6,213
1983										
No Degree	0.3	1.7	1.7	1.4	1.7	0.4	1.0	0.9	0.9	1.0
High School	99.6	93.2	60.1	37.7	82.3	99.0	90.2	56.7	44.2	78.3
Some College	0.3	5.2	25.9	25.4	11.2	0.8	8.9	31.9	28.2	16.2
BA/BS+	0.1	0.1	12.6	35.7	5.0	0.0	0.1	10.6	26.9	4.8
Total Degree	99.8	98.4	98.4	98.7	98.4	99.7	99.1	99.2	99.2	99.1
N	1,486	33,794	12,548	2,607	50,435	284	5,305	2,303	557	8,449

SOURCE: DMDC, Monterey

in FY 1983, 99.0% of this age group had graduated from high school prior to entry while .8% had some college.

Of the males, all entry age groups have decreased the proportion of non-high school graduates to less than 2.0%. The most dramatic turn-around was evidenced by the 17 year old males who decreased the proportion of non-high school entrants from 38.6% in FY 1973 to .3% in FY 1983. Seventeen year old males who entered the Air Force in FY 1983 represented the highest proportion of high school graduates within this age group for any other branch. While the proportion of 18-20 year old male entrants with some college has remained unchanged, there has been an increase in high school graduates by nearly 13.0%. Males 21-24 have increased the proportions of high school graduates and those with some college to 60.1% and 25.9%, respectively. However, the proportion of college graduates has dropped by nearly half since FY 1973. Entrants 25 years and older have increased the proportions of entrants with some college and college degrees to 61.0% in FY 1983--the highest proportion of all branches for both males and females within this entry age group.

Table 25 presents the Marine Corps educational degree distribution by entry age and sex for FY 1973 and 1983. In FY 1983, females exceeded males in terms of total degree proportions, but males have increased total degree proportions by nearly 50%. While females 25 years

Table 25

Marine Corps Educational Degree Distribution by Entry Age and Sex in %

for FY 1973 and FY 1983

Year/ Degree Held	Male					Female				
1973	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
No Degree	82.6	45.9	40.7	49.5	56.2	0.0	5.5	3.0	0.0	5.0
High School	17.4	49.4	42.8	41.6	39.5	100.0	85.8	56.9	73.7	81.2
Some College	0.1	4.7	14.5	6.9	4.2	0.0	8.9	36.3	26.4	13.4
BA/BS+	0.1	0.1	2.2	2.1	0.3	0.0	0.0	4.0	0.0	0.6
Total Degree	17.5	54.2	59.4	50.6	43.9	100.0	94.6	97.1	100.0	95.1
N	2,445	16,150	2,335	242	21,172	2	537	99	19	657
1983										
No Degree	27.2	6.9	8.6	7.1	8.9	0.0	0.3	0.8	0.9	0.4
High School	72.9	91.0	71.1	61.6	86.3	100.0	92.3	58.5	59.0	84.3
Some College	0.1	2.3	17.8	21.6	4.4	0.0	7.3	30.5	27.4	12.5
BA/BS+	0.0	0.1	2.6	9.8	0.6	0.0	0.4	10.4	12.9	3.0
Total Degree	72.9	93.2	91.5	93.0	91.2	100.0	99.8	99.3	99.2	99.7
N	2,208	23,993	3,821	629	30,651	133	1,323	375	116	1,947

SOURCE: DMDC, Monterey

and older have increased their entrant proportion of non-high school graduates by .9% since FY 1973, the proportion of college graduates has increased to nearly 13.0% from 0.0% in FY 1973. The 21-24 year old females represented a comparably high proportion of college graduates in FY 1983 with 10.4%. Females 18-20 years old have increased the proportion of high school and college graduates to 92.3% and .4%, respectively. Of the 17 year old females, 100.0% were high school graduates in FY 1983.

In FY 1973, Marine Corps males displayed unusually high proportions of entrants who had not graduated from high school. Nearly 83.0% of the 17 year olds and over 40.0% of the other male entry age groups were non-high school graduates. In FY 1983, the male entrants compared more favorably with the other branches in terms of educational quality represented by Marine Corps entrants. However, this may be more a reflection of the Marine Corps recruiting policy which considers those recruits who have, but may not have completed, 12 years of high school, as high school graduates. Nearly 73.0% of the 17 year old males had 12 years of high school while males 18-20 reflected a proportion of 91.0%. While this entry age group experienced a significant decrease in no degree proportions between FY 1973 and FY 1983, the proportion of entrants with some college decreased by 2.4%. Although 21-24 year old males increased the proportion of college level entrants by a marginal

amount, significantly more males within this age group were accessed having at least 12 years of high school. Males 25 years or older have increased the proportion of entrants with some college and college degrees to nearly 22.0% and 10.0% respectively. The proportion of entrants having at least 12 years of high school has increased to nearly 62.0%.

C. ADVANCED PLACEMENT

Although the military is experiencing in 1983 its highest levels of success in recruiting since the inception of the AVF, shortages within the supervisory levels of E-5 to E-7 continue to undermine optimum levels of readiness within all branches. However, in recent years, more emphasis has been placed upon advanced placement of eligible recruits in an effort to alleviate these shortages by circumventing the traditional, but lengthy, promotion and training path. Individuals eligible for advanced placement possess the education or mental capability and the emotional maturity necessary to meet the additional responsibility of advanced placement without the requisite level of military experience. Thus, advanced placement can provide a quantifiable measurement of input quality.

1. DOD Advanced Placement

Table 26 presents the DOD advanced placement distribution by entry age and sex for FY 1977, FY 1980, and FY 1983.

Table 26

DOD Advanced Placement Distribution by Entry Age and Sex in % for FY 1977-FY 1983

	17			18-20			21-24			25+		
Year/Paygrade	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
FY 1977												
E-1	90.9	91.0	86.3	86.8	86.8	86.7	78.7	79.1	76.4	64.7	63.8	68.5
E-2	6.2	6.0	11.5	8.1	7.9	10.5	6.9	6.7	8.2	10.3	10.4	9.5
E-3	3.0	3.1	2.2	5.1	5.3	2.9	13.2	12.9	15.1	22.0	22.1	21.6
E-4 to E-6	.3	.3	.2	.3	.3	.1	1.6	1.7	.5	3.4	4.0	.6
N	66,683	64,448	2,235	240,080	221,622	18,458	55,671	48,592	7,079	14,049	11,483	2,566
FY 1980												
E-1	92.0	92.1	90.9	88.4	88.4	88.9	80.0	80.9	76.1	71.1	71.8	69.0
E-2	4.3	4.1	7.0	5.7	5.5	7.5	5.5	5.1	7.2	5.1	4.5	6.6
E-3	3.9	4.0	2.3	6.0	6.3	3.8	13.3	13.0	14.8	20.5	20.6	20.1
E-4 to E-6	.2	.2	0.0	.3	.3	.1	1.6	1.4	2.2	3.8	3.4	4.6
N	51,469	47,343	4,126	230,008	200,956	29,052	57,620	46,431	11,189	16,428	12,092	4,336
FY 1983												
E-1	85.4	85.3	86.1	83.6	83.6	83.2	62.6	63.8	55.3	50.8	51.0	50.2
E-2	8.4	8.2	10.8	8.2	8.0	9.8	8.8	8.3	11.4	6.9	6.5	8.5
E-3	6.4	6.6	3.3	8.4	8.5	7.1	26.8	25.8	32.8	39.2	38.9	40.7
E-4 to E-6	.2	.2	0.0	.3	.2	.3	2.2	2.4	.8	3.4	3.9	1.0
N	18,977	17,568	1,409	200,175	179,127	21,048	60,481	51,677	8,804	19,324	15,466	3,858

SOURCE: DMDC, Monterey

Within DOD, the trend has been towards a higher proportion of entrants who qualify for advanced placement. This trend is evident across all age groups, although individuals 21 years and older comprise the largest proportion of accessions to the advanced paygrades of E-2 through E-6. The aggregate E-2 or above advanced placement percentage of 15.0% for 17 year olds in FY 1983 was comparable to, but nearly 2.0% less than, the aggregate percentage of 16.9% for 18-20 year olds. Advanced placement comprised a combined proportion of nearly 37.8% for entrants 21-24 years old in FY 1983. Of this proportion, nearly 27.0% were advanced to E-3 upon entry.

Although the total population of entrants in FY 1983 who were 25 years or older was significantly smaller than that of the 18-20 year olds or the 21-24 year olds, this age group alone represented the highest proportion of advanced placement to E-2 through E-6 with 49.5%.

Advanced placement to paygrades E-3 through E-6 of females within two youngest age groups represented a smaller proportion than that represented by the males. However, females 18-20 years old had twice the proportion advanced to E-3 through E-6 as did the female 17 year olds. Twenty one to 24 year old females exceeded males in advanced placement to E-3 by 7.0% but were behind males in advanced placement to E-4 through E-6. Nearly 4.0% of the males in

this age group were advanced to E-4 or above upon entry compared to 1.0% for the females.

2. Branch Advanced Placement

Table 27 presents the Army advanced placement distribution by entry age and sex for FY 1977 through FY 1983. Twelve percent of the 17 year olds and nearly 14.0% of the 18-20 year olds were advanced to E-2 or E-3 upon entry. Females within both entry age groups had a higher proportion of advanced placement than did the males. While the two younger entry age groups reflected higher proportions advanced to E-2 rather than E-3, the two older entry age groups reflected higher rates of placement to E-3 upon entry. Of the 21-24 year olds, nearly 32.0% were advanced to E-2 and E-3 upon entry but of that proportion, 26.3% were advanced to E-3. Nearly 45.0% of those 25 years and older were accessed under advanced placement. Surprisingly females were advanced upon entry at a higher proportion than were the males in both older entry age groups.

Table 28 presents the Navy advanced placement distribution by entry age and sex for FY 1977 through FY 1983. Unlike the Army, the Navy reflects unusually higher proportions of 17 and 18-20 year olds who were advanced to E-3 upon entry. Nearly 24.0% of the 17 year olds and 27.0% of the 18-20 year olds were entrants under the advanced placement program, but over 20.0% of these respective proportions represented advanced placement to E-3 alone. Of

Table 27

Army Advanced Placement Distribution by Entry Age and Sex in % for FY 1977-FY 1983

	17			18-20			21-24			25+		
Year/Paygrade	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
FY 1977												
E-1	92.5	92.9	79.8	88.3	88.8	83.0	79.5	81.1	68.9	63.3	63.7	61.6
E-2	6.2	5.8	17.6	9.2	8.7	14.1	5.9	5.4	8.6	11.8	12.2	10.3
E-2	1.4	1.3	2.4	2.5	2.5	3.0	12.7	11.3	22.1	22.2	20.9	27.9
E-4 to E-6	.1	.1	.3	.3	.3	.1	2.2	2.4	.6	3.0	3.4	.4
N	32,688	31,669	1,019	97,656	88,880	8,776	25,475	22,132	3,343	7,833	6,352	1,481
FY 1980												
E-1	94.8	95.2	89.1	91.9	92.5	88.4	87.2	88.9	79.7	77.9	79.8	72.1
E-2	4.3	3.9	9.0	6.1	5.7	8.5	3.4	2.9	5.6	3.4	2.8	5.1
E-3	1.1	1.0	2.1	2.1	2.0	3.2	9.5	8.3	14.8	18.8	17.4	22.8
E-4 to E-6	.1	.1	0.0	0.1	0.1	0.0	.2	.2	.1	.1	.1	.1
N	25,482	23,597	1,885	96,781	83,542	13,239	26,092	21,212	4,880	8,539	6,399	2,140
FY 1983												
E-1	88.1	88.6	82.9	86.5	87.1	82.1	68.5	70.7	56.5	55.5	56.3	52.6
E-2	9.1	8.7	14.2	8.7	8.5	9.9	5.3	5.0	7.2	4.4	4.0	5.7
E-3	2.9	2.8	3.1	5.0	4.6	8.2	26.3	24.4	36.4	40.3	39.9	41.9
E-4 to E-6	.1	.1	0.0	.1	.1	.1	.1	.1	.1	0.0	0.0	0.0
N	9,882	9,126	756	85,525	76,069	9,456	26,277	22,235	4,042	10,290	8,045	2,245

SOURCE: DMDC, Monterey

Table 28

Navy Advanced Placement Distribution by Entry Age and Sex in %

for FY 1977-FY 1983

	17			18-20			21-24			25+		
Year/Paygrade	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
FY 1977												
E-1	85.7	85.8	84.5	77.5	77.4	78.8	59.8	60.4	52.9	46.0	45.6	48.8
E-2	5.3	5.3	8.6	7.6	7.4	12.6	9.2	8.6	15.5	7.5	6.9	12.1
E-3	9.1	9.1	7.1	15.1	15.4	8.7	30.4	30.4	31.2	42.0	42.5	37.9
E-4 to E-6	.3	.3	0.0	.3	.3	0.0	.9	.9	.5	4.9	5.3	1.2
N	17,257	16,916	341	65,348	62,360	2,988	13,280	12,221	1,059	3,104	2,739	365
FY 1980												
E-1	84.8	84.5	88.7	77.8	76.7	85.6	66.3	66.5	65.4	58.9	58.7	59.6
E-2	2.7	2.4	6.6	4.1	3.7	7.4	6.5	5.5	11.4	6.4	5.4	10.1
E-3	12.6	13.2	4.8	18.2	19.7	7.1	27.3	28.2	23.2	34.3	35.5	30.1
E-4 to E-6	.1	.1	0.0	.2	.2	0.0	.2	.2	.1	.6	.7	.5
N	12,169	11,273	896	56,521	50,065	6,456	13,239	10,950	2,289	3,575	2,766	809
FY 1983												
E-1	76.5	75.8	88.6	73.6	72.4	84.7	57.5	57.2	59.5	49.8	49.4	51.5
E-2	3.1	3.0	4.7	3.9	3.5	7.1	6.5	5.8	10.8	6.0	5.3	9.3
E-3	20.5	21.4	6.9	22.6	24.2	8.3	36.1	37.2	29.8	44.3	45.4	39.2
E-4 to E-6	0.0	0.0	0.0	.2	.2	.1	.2	.2	0.0	.1	.1	0.0
N	4,158	3,923	235	47,848	42,939	4,909	14,565	12,504	2,061	5,035	4,101	934

SOURCE: DMDC, Monterey

the 21-24 year olds, nearly 43.0% entered under advanced placement as compared to 50.3% of those 25 years and older. Females within all age groups represented lower proportions of advanced placement to E-2 and E-3 than did males, however females consistently maintained proportions of entrants advanced to E-2 alone that were twice that of the male entrants.

Table 29 presents the Air Force advanced placement distribution by entry age and sex for FY 1977 through FY 1983. Nearly 5.0% of the 17 year olds and 10.0% of the 18-20 year olds entered into paygrades E-2 and E-3 in FY 1983. Females 18-20 years old were advanced upon entry at higher proportions than were the males. Among the older entry age groups, advancement to E-4 through E-6 becomes a significant factor. Nearly 38.0% of the 21-24 year olds were entered under advanced placement to E-2 and E-3 but an additional 7.9% were advanced to E-4 through E-6. While males were advanced to E-4 through E-6 at a greater proportion than females, females had greater proportions placed in E-2 or E-3 upon entry than did the males. Of those 25 years and older, nearly 46.0% were advanced to E-2 and E-3 upon entry, but 19.4% were advanced to E-4 through E-6. This was the greatest proportion placed at this level within any age group and within any branch. Females within this age group follow the trend established by the 18-20 year old females with a proportionately

Table 29

Air Force Advanced Placement Distribution by Entry Age and Sex in %

for FY 1977-FY 1983

	17			18-20			21-24			25+		
Year/Paygrade	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
FY 1977												
E-1	98.0	97.9	98.5	97.8	97.7	98.7	96.9	96.5	98.5	92.5	90.5	97.6
E-2	2.1	2.1	1.6	2.2	2.3	1.4	2.2	2.4	1.5	3.1	3.5	1.9
E-3	0.1	0.1	0.0	0.1	0.1	0.1	0.4	0.5	0.0	1.7	2.2	0.4
E-4 to E-6	0.0	0.0	0.0	.2	.2	0.0	.7	.8	.2	3.0	4.0	.4
N	7,317	6,605	712	48,173	42,424	5,749	12,608	10,189	2,419	2,329	1,679	650
FY 1980												
E-1	97.6	97.4	99.1	95.3	95.4	94.7	78.8	78.8	79.0	66.3	63.5	71.2
E-2	0.2	0.2	0.2	2.1	1.9	2.6	4.7	4.8	4.3	3.2	2.9	3.6
E-3	2.3	2.6	0.9	2.8	2.8	2.8	11.2	11.3	10.9	15.0	17.4	10.8
E-4 to E-6	0.0	0.0	0.0	.2	.2	.1	5.6	5.3	6.0	15.8	16.5	14.6
N	7,104	5,998	1,106	47,796	39,929	7,867	13,984	10,325	3,659	3,542	2,260	1,282
FY 1983												
E-1	95.7	95.6	96.2	90.4	90.9	87.1	54.6	55.4	50.2	35.1	34.1	39.6
E-2	0.6	0.4	1.5	5.4	5.1	7.2	10.9	10.5	13.1	8.1	8.0	8.6
E-3	3.8	4.1	2.5	4.3	4.1	5.7	26.8	25.5	34.4	37.7	35.8	46.5
E-4 to E-6	.1	.1	0.0	.3	.2	.2	7.9	8.9	2.5	19.4	22.3	5.6
N	1,774	1,489	285	39,727	34,370	5,357	15,081	12,758	2,323	3,205	2,643	562

SOURCE: DMDC, Monterey

high percentage placed at E-2 and E-3 rather than at E-4 through E-6.

Table 30 presents the Marine Corps advanced placement distribution by entry age and sex for FY 1977 through FY 1983. Unlike the other branches, the Marine Corps has continued to place its entrants within the more traditional levels of E-1 and E-2. Of the 17 year olds, 17.5% were advanced to E-2 upon entry in FY 1983. Females in this age group exceeded males by nearly 5.0% in placement at E-2. The 18-20 year olds had 18.2% of their entry age group rated as E-2 upon entry, yet 30.3% of the females were so rated. This increased disparity between male and female advanced placement proportions is reflected within the two older entry age groups as well. Of the entrants 21-24 years old, 27.0% of the males and nearly 50.0% of the females were advanced to E-2; of those 25 years and older, 37.0% of the males and nearly 56.0% of the females were so rated.

D. MENTAL GROUP DISTRIBUTION

In 1974, with the advent of the AVF, OSD directed the services to develop a common test battery for operational use that would include an Armed Forces Qualification Test (AFQT) covering Word Knowledge, Arithmetic Reasoning, and Spatial Perception. In January 1976 all services began using Armed Services Vocational Aptitude Battery (ASVAB) forms 6 and 7 as common selection and classification

Table 30

Marine Corps Advanced Placement Distribution by Entry Age and Sex in % for 1977-FY 1983

	17			18-20			21-24			25+		
Year/Paygrade	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
FY 1977												
E-1	88.9	89.1	77.4	84.4	84.8	73.0	79.3	80.3	62.8	69.5	71.6	48.6
E-2	11.2	11.0	22.7	15.6	15.2	26.9	19.6	18.5	36.5	26.9	24.7	48.6
E-3	0.1	0.1	0.0	0.1	0.1	0.2	0.4	0.5	0.0	0.7	0.8	0.0
E-4 to E-6	0.0	0.0	0.0	.1	.1	.2	1.0	.9	.8	3.0	3.2	3.0
N	9.421	9,258	163	28,903	27,958	945	4,308	4,050	258	783	713	70
FY 1980												
E-1	88.4	88.9	75.4	86.3	86.9	76.0	82.3	83.7	66.5	73.5	77.1	50.5
E-2	11.6	11.1	24.7	13.7	13.1	23.9	17.6	16.2	33.6	25.7	22.4	46.7
E-3	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0
E-4 to E-6	0.0	0.0	0.0	.1	.1	0.0	.2	.2	0.0	1.1	.7	2.9
N	6,714	6,475	239	28,910	27,420	1,490	4,305	3,944	361	772	667	105
FY 1983												
E-1	82.6	82.8	78.2	81.8	82.4	69.7	71.2	73.0	50.3	60.0	62.8	43.6
E-2	17.5	17.3	21.9	18.2	17.6	30.3	28.9	27.0	49.8	39.7	37.0	55.6
E-3	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
E-4 to E-6	0.0	0.0	0.0	.1	.1	0.0	.1	.1	0.0	.4	.2	.9
N	3,163	3,030	133	27,075	25,749	1,326	4,558	4,180	378	794	677	117

SOURCE: DMDC, Monterey

batteries for production testing at Armed Forces Entrance and Examining Stations. Norming was based upon an arbitrarily chosen standard reference population called the World War II mobilization population [Ref. 8].

The basic format was redesigned in October 1980 when a new AFQT was introduced that included Word Knowledge, Arithmetic Reasoning, Paragraph Comprehension, and Numerical Operations. The AFQT is computed by adding the raw component scores; the resulting total raw score is converted to an AFQT percentile score using a conversion table. AFQT percentile scores, and their comparable mental group categories that form the basis for military selection criteria, can be interpreted in other metrics as well. As shown in Table 31, ranking by score achieved on the AFQT can be tied to the total population and comparable IQ levels.

In any discussion of AFQT caution must be be exercised. The content of the AFQT has changed, and therefore different versions lack strict psychometric comparability even when they are mechanically equivalent in a normative sense [Ref. 9].

Thus, changes in AFQT content may affect qualification. For example, recruits who would have qualified by reason of good scores on Spatial Perception now may not qualify, because the Paragraph Comprehension test that replaced it

Table 31

Alternative Metrics for Mental Groups

MG	AFQT Percentile Rank	Percent Reference Population in MG	Z or Standard Score[a]	Navy Standard Score[b]	Army/MC Standard Score[c]	IQ[d]
I	93	7	1.48	65	130	122
II	65	28	0.39	54	108	106
IIIA	49	16	-0.03	50	99	100
IIIB	31	18	-0.49	45	90	93
IVA	21	10	-0.80	42	84	88
IVB	16	5	-0.99	40	80	85
IVC	10	6	-1.28	37	74	81
V	1	9	-2.29	27	54	66

---

[a] Mean = 0, S.D. = 1 where $Z = \frac{x-\bar{x}}{S.D.}$

[b] NSS = 10Z + 50 (Mean = 50, S.D. = 10)

[c] Mean = 100, S.D. = 20

[d] Wechsler Adult Intelligence Scale Standard Score Mean = 100, S.D. = 15

Source: CNA 81-0151, 5 February 1981.

is more like the other academic aptitude tests in the AFQT. [Ref. 10]

In addition, iniquities in norming have plagued the AFQT since its inception. Soon after implementation in January 1976 there were indications that the norms were too easy in the upper half of the score distribution. Consequently, a new norm, or conversion table, was developed and implemented in August 1976. Further adjustments and study ensued. In April 1978 CNA Study 1115 reported that the new AFQT norms were too hard at the top and too easy at the bottom. After more rigorous sampling, CNA Study 1152 in April 1980 reported that the top scores were properly normed, but that the low ones were even more inflated than suspected. A subsequent Army study corroborated these findings [Ref. 11].

New norms were established, in addition to the development of new operational forms, that went into effect on 1 October 1980. Consequently, all data utilized in this section has been renormed to ensure the highest degree of accuracy for the purpose of analysis.

1. DOD Mental Group Distribution Trends

Within DOD the trend is towards a larger proportion of recruits who score within the top 50 percentile (Categories I, II and IIIA) on the AFQT.

Table 32 presents the DOD mental group distribution by entry age and sex for FY 1973 and FY 1983. The

Table 32

DOD Mental Group Distribution by Entry Age and Sex in %

for FY 1973 and FY 1983

Year/MG	Male					Female				
1973	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
I	1.5	3.6	9.1	7.4	3.7	0.0	1.6	3.0	3.7	2.0
II	24.1	31.5	35.9	27.4	30.3	8.0	36.6	38.9	44.9	37.4
IIIA	24.7	23.4	18.8	18.2	23.1	8.0	34.3	28.9	27.5	32.8
IIIB	34.9	28.5	22.2	27.1	29.2	12.0	7.6	6.5	5.5	7.2
IV	15.1	--	10.7	14.7	13.4	0.0	0.4	0.4	0.1	0.4
N	78,691	263,187	39,219	4,238	385,335	25	15,089	4,183	1,018	20,315
1983										
I	1.7	2.5	6.7	9.9	3.7	2.0	2.5	6.0	8.5	4.0
II	36.0	34.2	42.1	44.9	36.5	45.0	39.8	45.9	48.2	42.5
IIIA	32.4	24.5	20.2	18.1	23.8	38.4	32.6	27.0	26.7	30.8
IIIB	26.3	28.6	19.6	16.5	26.0	14.3	24.2	19.7	15.5	21.7
IV	3.7	10.3	8.7	6.9	9.4	0.6	1.2	0.8	0.5	1.0
N	17,563	179,127	51,677	15,466	263,838	1,409	21,048	8,804	3,858	35,119

Source: DMDC, Monterey

Note: Column %'s do not sum to 100 as Categories V and UNKNOWN were suppressed.

proportion of females within each entry age group entering as Category I to IIIA during FY 1983 exceeds that for all male entry age groups of the same mental group categories during the same year. Although females 25 years and older represented the highest proportion of Category I and II entrants for FY 1983 with 57.0%, 17 year old females had the highest proportion overall of top 50 percentile entrants with 85.4%. Females 18-20 and 21-24 years old represented nearly 75.0% and 79.0% of their respective age groups who entered in Category I-IIIA.

Of the males, those 25 years and older had the highest male proportion of entrants classified Category I-IIIA. Although this age group had the lowest proportion classified as IIIA, nearly 10.0% were classified as Category I which was the highest proportion of any age group both male and female. Of the males 18-20 years old, 61.2% were classified in Category I-IIIA reflecting the lowest proportion of any age group, both male and female. Males 17 and 21-24 years old reflected comparative proportions of top 50 percentile entrants with 70.1% and 69.0% respectively.

2. Branch Mental Group Distribution Trends

Table 33 presents the Army mental group distribution by entry age and sex by FY 1973 and 1983. In FY 1973, 97.8% of all females accessed were in Category I-IIIA. That proportion has dropped to 76.5% in FY 1983 as the Army has accepted larger proportions of females classified as

Table 33

Army Mental Group Distribution by Entry Age and Sex in %

for FY 1973 and FY 1983

Year/MG	Male					Female				
1973	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
I	1.2	3.1	8.7	5.5	3.3	0.0	2.8	5.1	6.0	3.5
II	19.3	28.2	34.8	26.1	27.1	5.3	52.7	57.8	61.6	54.1
IIIA	23.7	23.0	19.3	18.8	22.7	5.3	42.3	35.1	32.3	40.2
IIIB	35.6	30.1	23.8	31.3	30.6	0.0	0.1	0.0	0.0	0.1
IV	20.5	15.8	13.5	18.4	16.6	0.0	0.0	0.0	0.0	0.0
N	33,534	108,205	17,271	2,171	161,181	19	6,163	1,652	502	8,336
1983										
I	1.4	2.2	6.4	10.1	3.5	2.2	2.2	6.1	6.0	4.0
II	32.3	29.2	37.8	43.4	32.1	45.6	37.2	42.6	46.1	40.1
IIIA	35.4	23.9	20.9	19.2	23.9	40.9	34.5	27.9	29.0	32.4
IIIB	27.7	29.8	20.5	17.9	27.0	11.6	26.2	23.6	17.1	26.6
IV	3.4	15.1	14.8	9.6	13.7	0.0	0.2	0.1	0.1	0.1
N	9,126	76,069	22,235	8,045	115,475	756	9,456	4,042	2,245	16,499

Source: DMDC, Monterey

Note: Column %'s do not sum to 100 as Categories V and UNKNOWN were suppressed.

Category IIIB. Nonetheless, females within the top 50 percentile still maintain higher entry proportions than do the males for comparable mental group categories. As with DOD females, in FY 1983 Army females 25 years and older had higher proportions within Categories I and II than any other female or male age group, yet 17 year old females had the highest overall proportion of male and female entrants classified within the top 50 percentile. Within the female age groups of 18-20, 21-24 and 25 years and older, Category I-IIIA proportions increased by age with 73.9%, 76.6%, and 81.1% respectively. Of the females 18-20 years old, 26.2% were classified as Category IV in FY 1983 while only 11.6% of the 17 year old females were classified as such.

In FY 1983 Army males 25 years and older had the highest proportion of entrants classified in the top 50 percentile. Of that proportion, 10.1% were in Category I alone which represented the highest proportion of both males and females in all Army entry age groups which were classified in this category. Males 18-20 years old represented the lowest proportion of top 50 percentile entrants with 55.3%. In contrast, this age group had the highest proportion over all sex and age groups classified in the lower 50 percentile with nearly 45.0%. In FY 1983, 17 year old male entrants had 69.1% of their age group classified in the top 50 percentile yet, since FY 1973,

decreased the proportion classified in the lower 50 percentile by nearly half. Of the males 21-24 years old, 65.1% were classified in the upper three mental group categories in FY 1983 and were the only entry age group to reflect an increase, since FY 1973, in accessions within Category IV.

Table 34 represents the Navy mental group distribution by entry age and sex for FY 1973 and 1983. In FY 1983, males and females within each age group maintained comparable proportions of Category I-IIIA entrants with the exception of the 17 year olds, where males exceeded females. Of the females 25 years and older, nearly 83.0% of FY 1983 entrants were classified as top 50 percentile. Seventeen and 21-24 year old females had comparable proportions of 73.4% and 74.5% within the top three mental group categories. Females 18-20 years old had the lowest proportion of 64.9% within the top 50 percentile, but also the highest proportion of lower 50 percentile female entrants which made them comparable to males of the same age group. Although the proportion of females within Category IV is 5.3% less than that for the males, it is representative of an increase in female Category IV proportions since FY 1973. Of the Navy males 25 years and older, 78.3% were classified categories I-IIIA, the highest for all male entry age groups during FY 1983. Of this proportion, 10.4% were classified as Category I which was the highest proportion

Table 34

Navy Mental Group Distribution by Entry Age and Sex in %

for FY 1973 and FY 1983

Year/MG	Male					Female				
1973	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
I	1.3	4.1	10.7	10.3	3.9	0.0	0.6	0.8	0.0	0.6
II	22.9	35.3	42.4	33.3	32.7	0.0	8.6	8.4	6.0	8.5
IIIA	25.2	22.3	18.3	15.2	22.7	25.0	7.9	7.5	7.2	7.8
IIIB	32.2	23.6	17.5	20.8	25.3	50.0	7.1	7.8	12.5	7.4
IV	18.7	14.8	11.2	18.7	15.6	0.0	1.3	1.5	0.6	1.3
N	21,761	60,166	6,236	536	88,699	4	3,811	965	169	4,949
1983										
I	2.6	3.2	7.3	10.4	4.4	0.9	2.2	4.7	8.2	3.5
II	41.9	38.4	46.2	50.3	40.9	41.8	35.7	45.4	51.7	40.2
IIIA	30.4	22.9	18.8	17.6	22.2	30.7	27.0	24.4	22.6	25.9
IIIB	21.0	26.0	19.4	15.9	23.7	24.7	31.8	23.3	16.0	27.7
IV	4.1	9.5	6.5	5.3	8.3	2.2	3.6	2.4	1.8	3.0
N	3,923	42,939	12,504	4,101	63,467	235	4,909	2,061	934	8,139

Source: DMDC, Monterey

Note: Column %'s do not sum to 100 as Categories V and UNKNOWN were suppressed.

for this mental group category within all male and female entry age groups.

Table 35 represents the Air Force mental group distribution by entry age and sex for FY 1973 and 1983. In FY 1973, the Air Force did not access any 17 year old females, yet even with FY 1983 17 year old female accessions now included in the Air Force female population, females in every age group and mental Category I through IIIB match or exceed males in comparable age and mental groups. Females 21-24 and 25 years and older had comparable entrant proportions for the top 50 percentile of 83.8% and 83.4%, respectively. Females 17 and 18-20 years old also reflected comparable proportions within the top 50 percentile in addition to maintaining a nearly identical proportional distribution within each mental group category itself.

Of the Air Force males in FY 1983, those 25 years and older had the lowest proportion of top 50 percentile entrants with 66.5%. This represents the lowest proportion within all branches for this age group. Seventeen year old males reflected the highest proportion within the top 50 percentile of 75.1%. Males 18-20 and 21-24 years old represented an identical aggregate proportion within the top three mental group categories, yet mental group distributions within these two age groups were quite dissimilar. In particular, 27.5% of the 18-20 year old male

Table 35

Air Force Mental Group Distribution by Entry Age and Sex in %

for FY 1973 and FY 1983

Year/MG	Male					Female				
1973	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
I	3.4	4.6	10.5	10.6	5.3	0.0	0.5	2.0	2.2	0.9
II	47.2	36.9	37.6	28.5	38.0	0.0	37.7	36.8	38.2	37.5
IIIA	23.3	25.7	18.2	17.2	24.2	0.0	45.2	36.1	30.5	42.4
IIIB	24.1	28.5	19.2	19.3	26.6	0.0	16.8	12.1	10.1	15.3
IV	2.3	4.6	3.2	3.1	4.2	0.0	0.0	0.0	0.0	0.0
N	9,403	64,964	11,781	1,052	87,200	0	4,547	1,464	328	6,339
1983										
I	2.6	3.0	7.2	9.5	4.4	2.9	3.0	7.2	10.7	4.6
II	44.6	41.8	45.4	42.0	42.8	45.3	45.0	50.0	49.5	46.7
IIIA	27.9	27.9	20.1	15.0	25.3	31.3	31.6	26.6	23.2	29.7
IIIB	22.1	24.2	16.0	10.7	21.4	19.7	19.3	13.0	11.3	17.1
IV	2.9	3.3	1.4	1.3	2.7	1.1	1.3	0.4	0.0	1.0
N	1,489	34,370	12,758	2,643	51,260	285	5,357	2,323	562	8,527

Source: DMDC, Monterey

Note: Column %'s do not sum to 100 as Categories V and UNKNOWN were suppressed.

entrants were classified as lower 50 percentile which was the highest proportion for all Air Force male entry age groups.

Table 36 presents the Marine Corps mental group distribution by entry age and sex for FY 1973 and 1983. In FY 1983, 99.1% of the female entrants were classified in the top 50 percentile. No other branch reflects this level of quality among its female entrants. Female proportions for the top 50 percentile exceeded that of the males in every category and age group with the exception of 17 year old males in Category I. All of the seventeen year old female entrants in FY 1983 were within the top 50 percentile. Females 18-20 and 21-24 were comparable with 99.1% and 99.3% of their respective age groups within the top 50 percentile. Although females 25 years and older had the lowest female proportion with the top 50 percentile, 10.3% were classified as Category I which was substantially higher than any other female or male entry age group. This age group also accessed the highest female entry age proportion of lower 50 percentile with 3.6%

Top 50 percentile proportions were significantly lower for Marine Corps males with those 25 years and older reflecting the highest proportion of 69.2%. Males 18-20 years old represented the lowest proportion of males within the top 50 percentile with 57.9%, and a complementary high

Table 36

Marine Corps Mental Group Distribution by Entry Age and Sex in %

for FY 1973 and FY 1983

Year/MG	Male					Female				
1973	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
I	1.3	2.0	3.8	5.5	2.0	0.0	2.5	4.0	0.0	2.7
II	21.8	23.6	24.7	22.4	23.2	50.0	40.2	50.0	68.5	42.5
IIIA	27.6	21.9	19.8	20.7	23.4	0.0	38.4	28.5	26.4	36.5
IIIB	44.5	32.8	31.8	32.6	36.1	50.0	18.0	16.7	5.3	17.6
IV	5.1	19.8	20.2	18.8	15.6	0.0	0.8	1.0	0.0	0.8
N	13,993	29,852	3,931	479	48,255	2	568	102	19	691
1983										
I	1.1	1.9	5.4	6.4	2.3	0.8	3.2	5.3	10.3	3.9
II	35.5	31.8	42.4	41.9	33.7	46.7	52.5	59.3	54.8	53.5
IIIA	28.3	24.2	20.6	20.9	24.0	52.7	43.4	34.7	31.7	41.7
IIIB	31.0	35.4	26.4	25.9	33.7	0.0	1.0	0.6	1.8	0.9
IV	4.3	7.0	5.4	5.2	6.6	0.0	0.2	xx	1.8	0.3
N	3,030	25,749	4,180	677	33,636	133	1,326	378	117	1,954

Source: DMDC, Monterey

Note: Column %'s do not sum to 100 as Categories V and UNKNOWN were suppressed.

of 42.4% within the lower 50 percentile. Seventeen and 21-24 year old males represented nearly 65.0% and 69.0% of their respective age groups within the top three mental group categories. Although Marine Corps males of all entry age group have significantly reduced the proportions of lower 50 percentile entrants, 17 year old males represent the most significant change in Category IIIB and IV proportions. In FY 1973, lower 50 percentile entrants accounted for nearly 60.0% of the lower 50 percentile entrants; in FY 1983 that proportion had been reduced to 35.3%.

IV. UTILIZATION

A. OCCUPATIONAL DISTRIBUTION

The Occupational Conversion Manual, published by the Office of the Assistant Secretary of Defense, includes a compilation of Defense Department officer and enlisted occupational specialties. These occupational specialties are aggregated within an occupational coding structure that is designed to group similar occupations from the four branches of service into a logical and consistent structure suitable for a variety of analytical purposes. Table 37 contains a listing of the ten Enlisted Occupational Areas that will be discussed in this chapter. Appendix A contains a more complete listing of these ten Enlisted Occupational Areas subdivided by Occupational Groups and Subgroups within each Occupational Area.

Because of the disparity between each of the branches regarding the policy of when to assign an occupational code to an individual, DMDC assigns an occupation code at time of separation or from latest Active Duty information in an effort to standardize data. This code is based upon the individual's career placement at time of separation, and may not have been the career field to which the individual had been assigned at time of enlistment. For the purpose of this analysis, FY 1981 data was utilized. In choosing

Table 37

Enlisted Occupational Areas

Code	
0	Infantry, Gun Crews, and Seamanship Specialists
1	Electric Equipment Repairman
2	Communications and Intelligence Specialists
3	Medical and Dental Specialists
4	Other Technical and Allied Specialists
5	Functional Support and Administration
6	Electrical/Mechanical Equipment Repairmen
7	Craftsmen
8	Service and Supply Handlers
9	Non-Occupational

this year a sufficient number of separations would be available to utilize the entry group as a viable data base while maintaining the essence of timely analysis.

1. DOD Occupational Distribution

The most dramatic disparity in occupational assignment results from sex and not entry age. Table 38 presents the DOD occupational distribution by entry age and sex for FY 1981. While both male and female members had high proportions within the non-occupational area, nearly 30.0% of the women filled administrative/support functions as compared to a proportion of less than 9.0% for the males. The males continue to be classified in the more traditional fields of infantry and electrical/mechanical equipment repair (Occupational Areas 0 and 6). However, even after categorizing by sex, these two occupational areas still reflect differences in assignment by entry age. Of the seventeen year old males, 20.4% were assigned to Occupational Area 0; this assignment proportion decreased with increased entry age to 13.6% for males 25 years and older. Of the males 18-20 years old, 21.0% were assigned to Occupational Area 6 which was nearly twice the proportion for males 25 years and older. Yet this same entry age group reflected the lowest assignment proportion of all entry age groups for Occupational Area 9.

Other Occupational Areas which reflected increased assignment proportions with increased entry age were

Table 38

DOD Occupational Distribution by Entry Age and Sex in %

for FY 1981

Occupational Area	Male					Female				
	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
0	20.4	15.7	14.2	13.6	15.9	.9	.6	.7	.9	.7
1	5.9	7.9	9.4	8.6	8.0	3.7	3.9	4.9	5.3	4.2
2	8.7	7.9	8.4	9.0	8.1	11.7	12.2	12.0	11.9	12.1
3	2.2	2.6	4.1	5.6	2.9	10.0	10.1	10.8	11.9	10.4
4	1.2	1.5	2.0	2.5	1.6	1.5	1.8	2.5	2.8	2.0
5	7.7	8.5	9.9	12.0	8.8	30.2	30.7	28.4	25.4	29.7
6	16.6	21.0	17.1	12.0	19.5	8.1	7.6	7.8	6.6	7.6
7	2.5	3.9	2.9	2.3	3.5	1.5	1.6	1.6	1.4	1.6
8	7.7	9.9	8.1	6.8	9.2	9.1	11.2	9.6	9.1	10.5
9	27.6	21.4	24.3	28.2	22.9	23.9	20.8	22.2	25.2	21.8
N	33,397	191,077	45,538	12,555	282,567	2,875	24,849	9,261	3,598	40,583

Medical and Dental Specialists, Other Technical and Allied Specialists, and Functional Support and Administration. Females were much more evenly distributed than males across all entry age groups within each Occupational Area. However, a much higher proportion of 17 year old females were assigned to Functional Support and Administration than were females 25 years and older, indicating an opposing trend to male assignment policy for this Occupational Area.

2. Branch Occupational Distribution

Within each of the branches entry age, as well as sex, does become a factor in the occupational distribution of military members. Sex-related differences in occupational assignment continue to reflect more traditional assignment policies.

Table 39 presents the Army occupational distribution by entry age and sex. Army males dominated the infantry related occupational area with 17 year old males reflecting the highest proportion of participation with 35.2% compared to 25.2% for males 25 years and older. Of the males 21-24 years old and 25 years and older, 4.7% and 6.1%, respectively, were classified as Medical and Dental Specialists (Occupational Area 3) while only 3.0% of 17 year olds and 3.4% of the 18-20 year olds were classified within this area. Males 25 years and older had nearly 15.0% of their age group classified as Functional Support and Administration

Table 39

Army Occupational Distribution by Entry Age and Sex in %

for FY 1981

Occupational Area	Male					Female				
	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
0	35.2	28.7	28.8	25.2	29.3	1.3	1.0	1.2	1.2	1.1
1	4.5	4.1	4.3	4.9	4.2	2.2	1.6	2.7	3.7	2.1
2	12.7	11.1	12.4	12.8	11.6	14.5	13.4	15.0	16.1	14.1
3	3.0	3.4	4.7	6.1	3.7	12.5	12.1	12.7	13.6	12.4
4	1.7	1.7	2.1	2.8	1.8	1.9	1.6	2.0	2.2	1.8
5	11.5	11.1	12.1	14.7	11.5	42.3	40.8	35.9	29.8	38.7
6	15.3	17.0	14.2	11.2	16.0	6.1	5.5	6.0	7.1	5.8
7	1.7	3.2	2.2	1.8	2.8	.6	.8	.6	.3	.7
8	7.8	13.8	11.1	9.1	12.4	9.1	13.0	11.6	11.8	12.3
9	7.0	6.4	8.6	11.9	7.1	10.0	10.7	12.7	14.6	11.5
N	11,709	64,786	16,420	5,666	98,481	1,362	10,866	3,963	1,930	18,121

(Occupational Area 5) which was the highest proportion of all male entry age groups assigned to this area.

Army females dominated the administrative occupational area (Occupational Area 5) with 17 year olds reflecting the highest proportion of participation among the four entry age groups with 42.3%. Females 25 years and older reflected a significantly lower proportion assigned to Occupational Area 5 with 29.8%. In contrast, nearly 15.0% of the females 25 years and older were classified as Non-Occupational (Occupational Area 9) whereas only 10.0% of the 17 year old females were so classified.

Table 40 presents the Navy occupational distribution by entry age and sex. While the age-related differences within the medical/dental and administrative areas are still evident for the males, it is the sex-related difference that becomes more pronounced for these two traditionally female occupations. Of the males, nearly 6.0% of the 21-24 year olds and nearly 9.0% of those 25 years and older were classified as Functional Support and Administration (Occupational Area 5) as compared to less than 4.0% for the 17 and 18-20 year old males. Only 12.6% of those males 25 years and older were classified as Electrical/Mechanical Equipment Repairmen as compared to 21.2% for the 18-20 year old males. Over half of the 17 year old males were classified as Non-Occupational

Table 40

Navy Occupational Distribution by Entry Age and Sex in %

for FY 1981

Occupational Area	Male					Female				
	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
0	1.4	1.3	1.2	1.8	1.3	.7	.4	.4	.8	.5
1	6.8	9.8	10.8	11.9	9.7	3.1	3.7	3.8	5.5	3.9
2	7.7	8.0	8.3	7.7	8.0	8.9	13.0	9.9	8.1	11.5
3	2.3	3.2	5.3	6.3	3.6	11.1	12.0	12.4	12.9	12.1
4	.3	.6	.8	1.2	.6	1.0	1.0	2.2	3.0	1.5
5	3.4	3.8	5.8	8.7	4.3	12.6	15.6	18.8	18.7	16.5
6	17.2	21.2	17.6	12.6	19.7	3.6	5.3	5.5	3.7	5.1
7	3.2	4.6	3.4	2.4	4.1	.9	1.3	2.0	2.9	1.6
8	3.6	3.2	3.2	3.8	3.3	4.9	4.5	4.5	4.0	4.5
9	54.6	44.9	44.0	44.1	46.0	53.8	43.7	41.1	40.7	43.4
N	10,751	52,971	12,595	3,732	80,049	623	5,725	2,294	1,004	9,646

(Occupational Area 9) whereas the other three male entry age groups reflected proportions between 44.0% and 44.9%. Females followed much the same entry age assignment trends as those represented by the males for Occupational Areas 5 and 9 in that the older age female accession reflected a higher proportion assigned to Functional Support and Administration than did the two younger age groups. Nearly 19.0% of females 18-20 and 25 years and older were assigned to Functional Support and Administration as compared to nearly 13.0% of the 17 year old females and nearly 16.0% of the 18-20 year old females. Over half of the females 17 years old were assigned to the Non-Occupational Area as compared to less than 41.0% for females 25 years and older and 41.1% for females 21-24 years old.

Table 41 presents the Air Force occupational distribution by age and sex. The occupational area that reflected the greatest proportion of male Air Force members is Electrical/Mechanical Equipment Repair with nearly 30.0%. However, this area was represented by a disproportionately smaller participation level of the 25 years and older entry age group. Nearly 31.0% of the 17 year old males and nearly 32.0% of the males 18-20 as compared to nearly 15.0% of the males 25 years and older were classified in Occupational Area 6.

Occupational Area 9, which includes general airmen and precadet assignee classifications reflected a much

Table 41

Air Force Occupational Distribution by Entry Age and Sex in %

for FY 1981

Occupational Area	Male					Female				
	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
0	9.6	7.9	4.5	3.1	7.2	.5	.4	.3	.2	.4
1	13.1	14.3	16.6	13.9	14.7	7.7	8.2	9.7	10.3	8.6
2	3.6	4.3	4.2	3.0	4.2	8.4	10.0	9.0	4.5	9.3
3	2.3	2.4	3.6	4.7	2.7	6.7	7.4	8.2	6.7	7.5
4	1.8	2.5	3.3	4.0	2.7	1.2	2.6	3.6	4.7	2.9
5	10.6	11.0	11.3	10.6	11.0	20.6	26.4	24.5	21.8	25.3
6	30.6	31.9	23.0	14.9	29.4	15.6	13.1	13.2	10.5	13.1
7	3.7	4.6	3.8	3.0	4.3	3.4	2.9	2.6	2.4	2.9
8	8.3	9.3	8.1	6.0	8.9	11.9	12.4	9.4	8.0	11.4
9	17.0	12.3	22.1	37.4	15.4	24.6	17.1	20.0	31.3	19.1
N	4,838	46,301	12,644	2,477	66,260	709	6,752	2,588	556	10,605

higher proportion of males 25 years and older than any of the male entry age groups. Males 25 years and older reflected a proportion assigned to Occupational Area 9 over twice that of the 17 year old males who had only 17.0%, and over three times that of the males 18-20 who had 12.3% classified in this area. Over 25.0% of the Air Force females were classified as Functional Support and Administration (Occupational Area 5). Although the proportions were high for all female entry age groups, the 18-20 year olds reflected the highest rate of participation with 26.4%. Although only 9.3% of the females were classified in the occupational area of Communications and Intelligence Specialists, this area did reflect an age-related disparity. Only 4.5% of the females 25 years and older were classified in this area as compared to the 18-20 year olds with 10.0% so classified. Reflecting the trend established by the males, a disproportionate amount of females 25 years and older were classified within Occupational Area 9. This proportion was nearly twice that of the proportion reflected for the 18-20 year old females who had 17.1% classified within this occupational area.

Table 42 presents the Marine Corps occupational distribution by age and sex for FY 1973 and 1983. Occupational Areas 0 and 9 reflect the highest proportion of male participation overall, but with quite distinct age

Table 42

Marine Corps Occupational Distribution by Entry Age and Sex in %

for FY 1981

Occupational Area	Male					Female				
	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
0	34.1	26.5	26.1	20.0	27.6	0.0	.1	0.0	0.0	.1
1	1.4	2.5	2.7	2.5	2.3	1.2	2.0	2.2	4.7	2.1
2	7.0	6.3	5.4	5.0	6.3	12.8	11.3	13.3	9.3	11.7
3	.1	.1	0.0	0.0	.1	0.0	0.0	0.0	0.0	0.0
4	1.3	1.2	1.2	1.8	1.2	1.2	1.7	1.5	1.9	1.6
5	5.5	7.3	9.7	12.1	7.3	37.1	34.4	34.7	27.8	34.3
6	7.0	11.7	8.0	5.6	10.5	9.4	6.4	4.4	2.8	6.1
7	1.6	2.6	2.0	2.7	2.4	2.8	2.6	2.2	1.9	2.5
8	14.4	15.1	11.3	7.5	14.4	12.8	18.2	20.0	13.0	17.8
9	28.0	27.2	34.1	43.0	28.3	23.3	23.7	22.2	38.9	24.1
N	6,099	27,019	3,879	680	37,677	181	1,506	416	108	2,211

distributions. A much higher proportion of 17 year old males were classified as general infantry and ground support than were males 25 years and older. Only 20.0% of the males 25 years and older were classified as Occupational Area 0 whereas 34.1% of the 17 year old males were classified in this area. However, 43.0% of the males 25 years and older were classified as Non-Occupational which includes Marine Corps trainee designations (Occupational Area 9). This age disparity between the 17 year olds and those 25 years and older was also reflected in Occupational Areas 5 and 8. Less than 6.0% of the males 17 years old were classified as Functional Support and Administration whereas 12.1% of the males 25 years and older were classified in this area. Occupational Area 8 reflected twice as many males 17 and 18-20 years old who were assigned to this area as males 25 years and older.

In contrast, females reflect just the opposite trend with more 17 year old females having entered Occupational Area 5 than females 25 years and older. While the 18-20 and 21-24 entry age groups reflected the same proportions with 34.4% and 34.7% respectively, 37.1% of the 17 year old females and 27.8% of the females 25 years and older were classified in this area. Nearly 20.0% of the females 21-24 years old were classified as Service and Supply Handlers, a disproportionate amount when compared to females 17 and 25 years and older who reflected

proportions of 12.8% and 13.0%, respectively. Reflecting the proportional entry age distribution for males within Occupational Area 9, females also reflected a high proportion of those 25 years and older who were classified in this occupation. Nearly 39.0% of the females 25 years and older were classified in this area as compared to 22.2% for the 21-24 entry age group and 23.3% and 23.7% for the 17 and 18-20 female entry age groups. A proportionately higher amount of females 17 and 18-20 years old were classified as Electrical/Mechanical Equipment Repairmen when compared to the two older entry age groups: 9.4% of the 17 year olds and 6.4% of the 18-20 year olds, as compared to 4.4% of the 21-24 year olds and 2.8% of those 25 years and older were classified in Occupational Area 6.

Because occupational distribution is based upon some separation, these proportions can be biased by high rates of attrition, especially in the first term. However, the format of the DMDC data does not lend itself to analysis of occupational distribution at time of enlistment; thus associated documentation of training and career intentions is unavailable in the DMDC files.

B. TERM OF ENLISTMENT

While accession of quality recruits in greater quantity has remained in the forefront of recruiting policy, accessing recruits for contractually greater lengths of enlistment

benefits the military in terms of utilization. Longer enlistments increase the return on investment of the military for costly training and develops a more substantial cadré of personnel with greater levels of experience.

For analysis of the trend in enlistments over the past decade, data on contractual terms of enlistment were analyzed by entry age between FY 1973 and FY 1983. The terms of enlistment categorized were 2 years, 3 years, 4 years and 6 years.

1. DOD Trends 1973-1983

Within DOD there has been a consistent trend towards longer enlistments. Table 43 presents DOD terms of enlistment by entry age and sex for FY 1973 and 1983. In FY 1973, two and three year contracts accounted for 51.0% of the total male enlistments; by FY 1983, two and three year enlistments had dropped to 31.1% of total male enlistments. Seventeen year old male enlistments for four years and above increased to 60.9% for FY 1983--a proportion that was significantly higher than that for FY 1973. Four and six year enlistments for the other three male entry age groups have also increased significantly in the past ten years.

Seventeen year old males reflected the smallest proportion of 2 and 4 year enlistments and the highest proportion of 3 year enlistments, when compared to the other three male entry age groups. These three older entry age

Table 43

DOD Term of Enlistment by Entry Age and Sex in %

for FY 1973 and FY 1983

Year/TOE	Male					Female				
1973	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
2 yr	8.7	11.6	14.4	13.6	11.3	4.0	3.4	2.9	3.7	3.3
3 yr	46.2	38.7	33.1	36.4	39.6	12.0	51.2	45.9	51.1	50.0
4 yr	43.6	47.0	48.1	44.7	46.4	16.0	43.2	47.7	39.9	43.9
6 yr	1.8	2.9	4.6	5.5	2.9	68.0	2.5	3.6	5.5	2.9
N	78,691	263,187	39,219	4,238	385,335	25	15,089	4,183	1,018	20,315
1983										
2 yr	2.9	3.3	3.4	3.9	3.3	2.6	1.2	.8	1.1	1.2
3 yr	36.7	27.5	25.7	27.9	27.8	32.7	31.8	30.3	35.2	31.8
4 yr	54.7	62.8	64.1	62.8	62.5	62.8	64.7	66.4	61.9	64.7
6 yr	5.8	6.5	7.0	5.6	6.5	2.0	2.4	2.6	1.9	2.4
N	17,568	179,127	51,677	15,466	263,838	1,409	21,048	8,804	3,858	35,119

Source: DMDC, Monterey

Note: Column %'s may not sum to 100 due to suppression of category UNKNOWN.

groups reflected comparable enlistment proportions for 2, 3, and 4 year enlistments. However, 18-20 and 21-24 year old males had the highest proportion of 6 year enlistments with 6.5% and 7.0%, respectively, when compared to the males 17 and 25 years and older.

Females have also decreased two and three year enlistments in favor of four year enlistments, the most dramatic increase being represented by the 17 year olds. Of the female entrants in FY 1983, those 18-20 and 21-24 years old had the highest proportion of 4 and 6 year enlistments of all female entry age groups with 67.1% and 69.0%, respectively. Females 17 and 25 years or older reflected higher proportions of 3 year enlistments. Seventeen year old females reflected a proportion of two year enlistments that was at least twice that of any other female entry age group with 2.6%.

2. Branch Trends 1973-1983

Within each of the branches, very different enlistment trends appear that are quite distinct from DOD trends. Tables 44 through 47 present the branch terms of enlistment by entry age and sex for FY 1973 and 1983.

Within the Army (Table 44), female lengths of enlistment are comparable to those for Army males. However, fewer females than males have enlisted for two years, and more females than males 18 years and older have enlisted for three years instead of four.

Table 44

Army Term of Enlistment by Entry Age and Sex in %

for FY 1973 and FY 1983

Year /TOE	Male					Female				
1973	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
2 yr	17.3	20.4	26.1	20.9	20.4	0.0	5.2	6.0	6.6	5.4
3 yr	62.6	64.3	58.7	58.6	63.3	10.6	87.7	85.2	87.1	87.0
4 yr	20.3	15.4	15.3	20.5	16.5	0.0	6.3	8.6	6.4	6.8
6 yr	.1	.1	.1	.1	.1	89.5	.9	.1	0.0	.9
N	33,534	108,205	17,271	2,171	161,181	19	6,163	1,652	502	8,336
1983										
2 yr	5.5	7.8	7.8	7.3	7.6	4.8	2.7	1.6	1.8	2.4
3 yr	64.4	58.0	55.3	51.4	57.5	58.5	68.0	64.4	59.8	65.6
4 yr	30.2	34.3	37.0	41.3	35.0	36.7	29.4	34.1	38.5	32.2
6 yr	.1	.1	.1	0.0	.1	.2	0.0	0.0	0.0	.1
N	9,126	76,069	22,235	8,045	115,475	756	9,456	4,042	2,245	16,499

Source: DMDC, Monterey

Note: Column %'s may not sum to 100 due to suppression of category UNKNOWN.

Of the 18-20 year old females, 68.0% enlisted for three years which represented the highest proportion of three year enlistments for any female entry age group. Seventeen year old females who enlisted for three years represented the lowest proportions with 58.5%, which was nearly 10% less than the proportional high. However, 17 year old females represented the highest enlistment proportion for two year enlistments at nearly 5.0% which was nearly twice the proportion for two year enlistments represented by the 18-20 year old females, and nearly three times that for the two older female entry age groups. Females 21-24 and 25 years and older were quite comparable in terms of enlistment proportions. However, females 21-24 years enlisted for three years at a proportionately higher rate than did females 25 years and older, whereas the latter had the higher proportion of four year enlistees--a proportion that was also significantly higher than that for any other Army female entry age group.

Seventeen year old Army males had the highest proportion of three year enlistments with 64.4% and the lowest proportions of two and four year enlistments when compared to all other Army male entry age groups. Males 18-20 and 21-24 had the two highest proportions of two year enlistments with 7.8%. Although these two age groups compared proportionately in the three and four year enlistments, males 18-20 years old maintained a higher proportion

of three year enlistments for the two entry age groups whereas males 21-24 maintained a higher proportion of four year enlistments for the two entry age groups. While males 25 years and older had the lowest proportion of three year enlistments, they also had the highest proportion of four year enlistments for all male entry age groups with 41.3%.

Within the Navy (Table 45), FY 1983 female six year enlistments for all entry age groups are still extremely low when compared to the males, yet FY 1983 enlistment proportions represented a dramatic shift away from three to four year enlistments.

Four year enlistments for females are comparable at 95% to 97% across all entry age groups. Females 18-20 years old represented the lowest proportion of six year enlistments at 3.0% whereas all the other female entry age groups reflected a proportion that was over 4.0%. During FY 1983 there were no two year enlistments with the exception of an insignificant proportion for the 21-24 year olds. Although females 18-20 and 21-24 had insignificant proportions of three year enlistments, females 17 and 25 years and older did reflect very small proportions with .2% and .3%, respectively.

Navy male enlistments were comparably distributed at four years with males 18-20 and 25 years and older representing the highest proportions with 83.6% and 83.5%

Table 45

Navy Term of Enlistment by Entry Age and Sex in %

for FY 1973 and FY 1983

Year/TOE	Male					Female				
1973	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
2 yr	.1	.1	.3	2.7	.1	0.0	0.0	.2	.6	.1
3 yr	56.7	44.8	36.5	40.3	47.1	25.0	53.9	47.4	43.2	52.2
4 yr	43.4	55.2	63.2	56.8	52.9	75.0	46.2	52.6	56.3	47.8
6 yr	.1	.1	.1	.4	.1	0.0	0.0	0.0	0.0	0.0
N	21,761	60,166	6,236	536	88,699	4	3,811	965	169	4,949
1983										
2 yr	.1	.1	.1	0.0	0.0	0.0	0.0	.1	0.0	.1
3 yr	.4	.3	.4	.6	.3	0.0	.2	.3	0.0	.2
4 yr	80.6	83.6	81.7	83.5	83.0	95.4	96.8	95.3	95.9	96.3
6 yr	18.9	16.1	17.8	15.9	16.6	4.3	3.0	4.1	4.0	3.4
N	3,923	42,939	12,504	4,101	63,467	235	4,909	2,061	934	8,139

Source: DMDC, Monterey

Note: Column %'s may not sum to 100 due to suppression of Category UNKNOWN.

respectively while 17 and 18-20 year old males represented the lowest proportion with 80.6% and 81.7% respectively. Although six year enlistments were relatively high across all male entry age groups, 17 year olds had the highest proportion with nearly 19.0%, followed closely by 21-24 year olds with nearly 18.0%. Two and three year enlistments were insignificant across all age groups with males 25 years and older reflecting no two year enlistments.

Within the Air Force (Table 46), four and six year enlistments have remained the traditional norm for both males and females. In FY 1983, female entrants accounted for a larger proportion of four year enlistments while males maintained a proportion of six year enlistments which was nearly twice that of the females.

Air Force females reflected comparable enlistment proportions for four years within all female entry age groups. Proportions ranged from 93.6% for females 18-20 years old to 94.4% for females 17 years old. Although six year enlistments were comparable for each female entry age group, 17 year olds did represent the lowest proportion with 5.3%, while the 18-20 year olds represented the highest proportion with 6.3%.

Air Force males 25 years and older had the highest proportion of four year enlistments for all male entry age groups with nearly 93.0%. This proportion was followed closely by males 21-24 years old, with the lowest

Table 46

Air Force Term of Enlistment by Entry Age and Sex in %

for FY 1973 and FY 1983

Year/TOE	Male					Female				
1973	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
2 yr	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 yr	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 yr	86.3	88.7	85.2	78.4	87.9	0.0	93.2	90.1	83.3	92.0
6 yr	13.8	11.4	14.9	21.7	12.2	0.0	6.9	10.0	16.8	8.1
N	9,403	64,964	11,781	1,052	87,200	0	4,547	1,464	328	6,339
1983										
2 yr	0.0	.1	.1	0.0	.1	0.0	.1	0.0	0.0	.1
3 yr	0.0	.2	.2	.2	.2	.4	.2	.1	0.0	.2
4 yr	84.3	87.3	90.1	92.7	88.2	94.4	93.6	94.2	94.0	93.8
6 yr	15.6	12.7	9.8	7.2	11.8	5.3	6.3	5.7	6.1	6.1
N	1,489	34,370	12,758	2,643	51,260	285	5,357	2,323	562	8,527

Source: DMDC, Monterey

Note: Column %'s may not sum to 100 due to suppression of Category UNKNOWN.

proportion of four year enlistments reflected in seventeen year old males with 84.3%. In contrast, 17 year old males had the highest proportion of six year enlistments with nearly 16.0% which was over twice that of males 25 years and older who had 7.2%.

In FY 1973 the Air Force did not enlist anyone for two or three years, yet in FY 1983 there were some enlistments of two and three years reflected, although the proportions were less than or equal to .4%.

Within the Marine Corps (Table 47), the emphasis has shifted from two and three year enlistments to three and four year enlistments. In FY 1983, females enlisted for four years at proportionately higher rates than did males.

Nearly 86.0% of the females within the entry age groups of 17 and 25 years and older enlisted for four years. These two age groups both had comparable enlistment rates for three years and six years. Females 21-24 years old had a six year enlistment proportion nearly twice that of any other female entry age group with 3.2%. Of all the female entry age groups, females 18-20 years old had the highest proportion of three year enlistments with 18.0% and the lowest proportion of four year enlistments with 80.4%. With the exception of females 21-24, there were no two year enlistments for the female entry age groups.

Table 47

Marine Corps Term of Enlistment by Entry Age and Sex in %

for FY 1973 and FY 1983

Year/TOE	Male					Female				
1973	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
2 yr	7.1	28.3	28.3	22.2	22.1	50.0	31.7	20.6	15.8	29.7
3 yr	21.5	17.3	14.6	11.1	18.3	0.0	46.0	52.0	52.7	46.9
4 yr	71.3	54.2	56.8	66.4	59.5	50.0	22.4	27.5	31.6	23.5
6 yr	.3	.3	.5	.5	.3	0.0	0.0	0.0	0.0	0.0
N	13,993	29,852	3,931	479	48,255	2	568	102	19	691
1983										
2 yr	.1	.1	.2	.3	.1	0.0	0.0	.3	0.0	.1
3 yr	18.5	19.3	21.3	22.2	19.5	12.8	17.8	13.5	12.9	16.3
4 yr	80.6	79.6	76.1	75.7	79.2	85.8	80.4	82.9	85.5	81.6
6 yr	1.0	1.2	2.6	2.0	1.4	1.6	1.9	3.2	1.8	2.1
N	3,030	25,749	4,180	677	33,636	133	1,326	378	117	1,954

Source: DMDC, Monterey

Note: Column %'s may not sum to 100 due to suppression of Category UNKNOWN.

Although Marine Corps males 21-24 and 25 years and older had the lowest proportions of four year enlistments for all male entry age groups in FY 1983 with an average of 76.0%, they also had the highest male proportions for three and six year enlistments. Seventeen year old males had the highest four year enlistment proportion with nearly 81.0% and complimentary low enlistment proportions for three and six years with 18.5% and 1.0%, respectively. Males 18-20 compared more favorably to the 17 year olds than they did to the older age group with an emphasis on four year enlistments reflecting a proportion of 79.6%.

V. ATTRITION PERFORMANCE

A. ATTRITION PROFILE

Attrition has been the traditional method of gauging performance within the military and, since the inception of the AVF, has increasingly gained in importance. When viewed within the context of a dwindling recruiting pool, increased training requirements, and budgeting constraints that demand high returns on investment, high levels of attrition can degrade a military's readiness--and thus its performance.

In this chapter attrition among entry age groups by sex within DOD and each of the branches will be discussed. In an effort to gain a better perspective of the issue, three accession years were analyzed at four distinct length of service points: 3 months, 12 months, 24 months, and 30 months. Analysis was truncated at the 30 month point because reenlistment/end of active obligated service (EAOS) becomes an issue at 36 months and could therefore contaminate analysis of attrition defined as the inability to complete a contractual agreement. Although the military still offers enlistments of two years, the Navy, Air Force, and Marine Corps had two year enlistment proportions of less than .3% for both male and female entry age groups during FY 1983. While the Army had higher proportions of two year enlistments

which will affect Army two year attrition data, two year enlistment proportions were less than 8.0% for both male and female Army entry age groups. A complete discussion of enlistment lengths is included in Chapter IV.B. Data were disaggregated by high school degree (HSDG) and non-high school degree (NHSDG) rates of attrition that were further stratified by sex in order to control for the influence of high school degree status and sex on attrition.

1. DOD Attrition Trends

Tables 48 and 49 present rates of attrition among male and female accessions within DOD for FY's 1978, 1979, and 1980 by entry age. Within the three years analyzed, cumulative attrition rates at 30 months indicated a decrease in attrition of both HSDG males and females from 1978 to 1980 entry groups. NHSDG males and females 17 and 18-20 years old for the same time period reflected an increase in attrition, as did NHSDG females 25 years and older.

In the first 30 months of FY 1980, NHSDG 17 and 18-20 year old males attrited at rates more than twice that for HSDG males within the same age groups. While all NHSDG male entry age groups had high 30 month attrition rates for FY 1980 accessions, 17 year old males had the highest rate with 44.4%, followed by males 25 years and older with nearly 42.0%. Male entrants 18-20 and 21-24 years old had comparable rates of attrition at 30 months with 39.4% and 39.0%, respectively. For HSDG males, there

Table 48

Percent Attrition Among Male Accessions Within DOD by Entry Age

FY 1978-FY 1980

Year	Total				HSDG				NHSDG			
1978	17	18-20	21-24	25+	17	18-20	21-24	25+	17	18-20	21-24	25+
3 mo.	9.8	8.6	10.9	12.6	6.0	7.3	9.8	11.5	13.1	13.0	16.4	17.9
12 mo.	17.7	14.5	18.2	21.1	10.9	12.1	16.0	19.3	23.4	22.7	28.2	30.5
24 mo.	27.5	21.2	24.6	27.8	17.0	17.8	21.9	25.5	36.3	33.0	37.2	39.4
30 mo.	30.9	23.6	26.8	29.9	19.3	19.9	23.9	27.4	40.7	36.4	40.5	42.4
Accessions	37,581	171,494	36,687	8,802	17,265	133,334	30,318	7,359	20,316	38,160	6,369	1,443
1979												
3 mo.	9.1	7.8	10.0	12.4	5.1	6.4	8.8	11.5	12.9	11.4	13.9	15.3
12 mo.	16.4	14.1	17.4	21.1	9.3	11.0	14.7	18.4	22.9	22.2	26.2	29.9
24 mo.	26.2	21.5	24.3	28.1	15.6	16.7	20.3	24.4	36.0	34.0	37.1	40.2
30 mo.	30.9	24.6	26.8	30.4	18.8	19.3	22.6	26.5	42.1	38.5	40.4	43.0
Accessions	33,294	175,596	35,840	9,009	16,029	126,945	27,307	6,879	17,265	48,651	8,533	2,130
1980												
3 mo.	9.4	7.6	9.9	13.0	5.1	6.2	8.7	12.3	11.4	11.0	13.3	15.0
12 mo.	18.0	13.7	16.7	21.5	9.2	10.5	13.8	18.9	22.1	21.4	24.3	28.3
24 mo.	31.4	22.0	24.2	28.6	16.0	16.8	19.9	24.7	38.7	34.7	35.4	39.0
30 mo.	35.7	24.5	26.4	30.5	17.6	18.5	21.6	26.3	44.4	39.4	39.0	41.7
Accessions	44,952	192,474	44,518	11,638	14,543	136,744	32,156	8,469	30,409	55,730	12,362	3,169

Table 49

Percent Attrition Among Female Accessions Within DOD by Entry Age

FY 1978-FY 1980

Year	Total				HSDG				NHSDG			
1978	17	18-20	21-24	25+	17	18-20	21-24	25+	17	18-20	21-24	25+
3 mo.	11.3	9.6	9.5	12.3	8.6	9.0	8.9	11.8	21.0	15.7	15.9	17.3
12 mo.	21.1	18.8	18.6	21.1	16.9	17.9	17.7	20.2	36.0	28.5	28.4	29.7
24 mo.	32.9	30.4	28.4	30.1	28.0	29.4	27.1	29.5	50.2	41.2	41.1	36.0
30 mo.	36.9	34.2	31.7	32.7	32.0	33.1	30.5	32.0	54.2	46.0	44.3	39.7
Accessions	2,883	22,617	8,567	3,208	2,245	20,720	7,806	2,908	638	1,897	761	300
1979												
3 mo.	11.1	10.0	10.8	13.1	9.0	9.3	10.3	12.8	20.4	18.0	16.2	15.8
12 mo.	20.4	18.7	19.0	21.6	17.5	17.7	18.5	21.4	32.9	30.3	24.5	23.7
24 mo.	32.0	29.4	28.0	28.2	28.6	28.4	27.4	27.7	46.6	41.8	34.2	32.4
30 mo.	36.0	33.0	31.1	30.7	32.6	31.9	30.5	30.3	50.9	45.6	37.8	34.9
Accessions	3,360	24,598	9,498	3,664	2,733	22,599	8,646	3,297	627	1,999	852	367
1980												
3 mo.	13.3	10.6	10.5	13.7	9.6	9.9	10.0	13.0	21.3	16.7	14.1	17.9
12 mo.	25.4	20.0	18.7	22.3	18.6	18.5	17.7	21.1	40.3	32.1	26.2	29.6
24 mo.	37.8	31.6	28.1	30.1	28.9	29.8	26.6	28.8	57.1	46.8	38.0	38.1
30 mo.	40.3	34.3	30.7	32.6	30.7	32.3	29.2	31.1	61.0	50.4	41.8	41.5
Accessions	4,099	28,937	11,131	4,316	2,808	25,757	9,742	3,701	1,291	3,180	1,389	615

is a positive correlation between older accessions and higher rates of attrition. Attrition for males 25 years and older is greater than two times that of male 17 year olds in the first three months and nearly 9 percentage points higher at 30 months with 26.3%. Males 21-24 years old reflected the second highest rate of 30 month attrition for FY 1980 accessions with nearly 22.0% while 18-20 year old males compared more favorably with the 17 year olds in terms of attrition with 18.5%.

Seventeen year old NHSDG females have consistently displayed attrition that is two times that of their HSDG age peers. HSDG females reflect the same trend as HSDG males in that rates of attrition increase with age although female rates are much higher than those of males, and are more evenly distributed across all age groups at 30 months.

Of the NHSDG females, 17 year olds reflected the highest rate of 30 month attrition for FY 1980 accessions with 61.0%. Although not as high, 18-20 year old females attrited at an equally significant rate of 50.4%. Females 21-24 and 25 years and older had comparable rates of 30 month attrition with 41.8% and 41.5%, respectively, although the latter did reflect higher rates of attrition at 3 and 12 months.

Of the HSDG females, the 21-24 year olds had the lowest rate of 30 month attrition with 29.2% while the 18-20

year olds had the highest with 32.3%. Females 17 years old and 25 years and older had comparable rates of 30 month attrition with 30.7% and 31.1%.

2. Branch Attrition Trends

Tables 50 and 51 present rates of attrition among male and female accessions within the Army for FY's 1978, 1979, and 1980. All FY 1980 NHSDG male accessions had attrition rates of over 40.0% at 30 months, although 18-20 and 21-24 year olds had the lowest rates when compared to the other two NHSDG age groups. Seventeen year old NHSDG males had the highest attrition rate of 45.2% at 30 months, yet NHSDG males 25 years and older reflected the highest rate of NHSDG attrition at 3 months, 12 months, and 24 months. HSDG males reflect a rate of attrition that increases with age at 12 through 30 months of service. However, HSDG 18-20 year old males had the highest rate of attrition at 3 months than any other HSDG or NHSDG age group.

FY 1980 NHSDG and HSDG female accessions reflected rates of attrition that were much higher than those for NHSDG and HSDG males of the same year. Over half of the NHSDG females 18-20 and 21-24 years old had attrited by 30 months. Yet, 17 year old NHSDG females represented the highest attrition rate at 30 months of all NHSDG females with 69.4%. The lowest attrition among NHSDG females was exhibited by those 25 years and older, yet at 30 months,

Table 50

Percent Attrition Among Male Accessions Within the Army by Entry Age

FY 1978-FY 1980

Year	Total				HSDG				NHSDG			
1978	17	18-20	21-24	25+	17	18-20	21-24	25+	17	18-20	21-24	25+
3 mo.	7.7	8.0	11.0	12.6	5.1	6.7	9.6	11.5	10.0	11.4	15.3	16.7
12 mo.	17.4	15.6	20.5	23.4	10.4	12.6	17.7	21.4	23.4	23.3	29.1	30.8
24 mo.	27.9	22.7	27.5	30.4	16.7	18.1	23.7	28.0	37.6	34.5	39.0	39.2
30 mo.	31.1	25.0	29.7	32.5	18.5	20.0	25.6	29.9	41.9	38.0	42.1	42.1
Accessions	13,154	70,986	16,220	4,589	6,086	51,034	12,221	3,625	7,068	19,952	3,999	964
1979												
3 mo.	6.5	7.2	9.2	11.4	3.7	5.2	7.3	10.1	9.4	10.0	12.4	13.9
12 mo.	15.3	15.6	19.1	23.2	8.7	10.9	15.1	19.2	22.2	22.3	26.1	30.6
24 mo.	26.1	24.2	27.3	31.5	14.9	16.6	21.3	26.5	37.7	35.1	37.8	41.0
30 mo.	30.0	27.2	29.8	33.8	17.3	18.6	23.4	28.7	42.8	39.4	41.0	43.5
Accessions	10,678	78,608	16,807	4,829	5,400	46,097	10,635	3,162	5,278	32,511	6,172	1,667
1980												
3 mo.	9.4	7.7	9.8	12.0	4.5	15.5	7.8	10.7	10.5	10.3	12.5	14.0
12 mo.	20.3	15.9	19.1	23.3	8.8	10.7	14.6	19.8	22.8	22.1	25.2	28.6
24 mo.	35.1	25.4	28.0	32.0	15.1	16.9	21.2	26.8	39.5	35.6	37.2	40.1
30 mo.	40.0	28.4	30.4	34.2	16.6	18.6	22.8	28.8	45.2	40.3	40.7	42.8
Accessions	23,597	83,542	21,212	6,399	4,250	45,797	12,220	3,897	19,347	37,745	8,992	2,502

Table 51

Percent Attrition Among Female Accessions Within the Army by Entry Age

FY 1978–FY 1980

Year	Total				HSDG				NHSDG			
1978	17	18-20	21-24	25+	17	18-20	21-24	25+	17	18-20	21-24	25+
3 mo.	8.0	9.0	9.6	14.3	7.0	8.8	9.4	14.0	16.0	13.6	13.7	17.9
12 mo.	19.3	20.7	21.8	24.7	17.3	20.2	21.4	24.2	37.4	30.6	28.9	32,1
24 mo.	32.4	34.6	34.0	36.1	29.6	34.1	33.5	35.7	56.5	45.4	42.2	41.5
30 mo.	36.2	38.8	37.5	38.7	33.4	38.2	37.1	38.3	60.3	49.4	45.1	45.3
Accessions	1,283	10,407	3,882	1,719	1,152	9,907	3,678	1,613	131	500	204	106
1979												
3 mo.	9.1	9.4	10.9	15.3	9.2	9.4	10.8	15.3	0.0	10.3	18.5	20.0
12 mo.	20.0	20.7	22.2	27.9	20.1	20.7	22.1	27.8	11.1	19.6	25.9	30.0
24 mo.	33.3	33.5	34.2	35.5	33.3	33.5	34.3	35.6	33.3	32.7	33.3	30.0
30 mo.	37.5	37.3	37.8	38.1	37.4	37.3	37.8	38.1	44.5	41.1	40.8	40.0
Accessions	1,335	10,572	3,651	1,602	1,317	10,465	3,624	1,592	18	107	27	10
1980												
3 mo.	15.4	12.3	12.9	17.7	11.4	11.4	12.4	17.1	23.3	19.5	17.3	21.5
12 mo.	31.4	24.7	24.1	29.5	23.6	22.9	22.8	28.1	46.5	40.2	35.0	38.2
24 mo.	45.5	38.3	35.7	38.7	35.8	36.0	34.1	37.4	64.2	57.8	48.5	46.8
30 mo.	48.4	40.8	38.1	41.4	37.6	38.4	36.4	39.7	69.4	61.2	52.4	51.0
Accessions	1,885	13,239	4,880	2,140	1,242	11,880	4,342	1,828	643	1,359	538	312

51.0% had attrited which still represents a significant loss. Of the HSDG females, those 21-24 had the lowest rate of attrition at 30 months with 36.4%. HSDG females had a higher rate of attrition than 17 year old HSDG females at 24 and 30 months of service although both age groups had established the same rate of attrition at 3 months. HSDG females 25 years and older have maintained the highest HSDG female rate of attrition throughout 30 months for all three years.

Tables 52 and 53 present rates of attrition among male and female accessions within the Navy for FY's 1978, 1979, and 1980. Navy male and female attrition among FY 1978-1980 accessions has remained much lower than that of DOD male and female accessions during the same time period. In FY 1980, NHSDG males 21-24 years old had the lowest NHSDG attrition at 30 months with 31.2%. NHSDG males 18-20 years old had a somewhat higher rate with 34.5% although their rate of attrition had initially remained lower than that of the 21-24 year olds through 12 months. FY 1980 NHSDG male accessions 17 years old and 25 year and older had the highest rates of attrition throughout the 30 month period with 41.4% and 36.8% HSDG males.

For Navy NHSDG females accessed in FY 1980, the highest and lowest rates of attrition were represented by those entrants 17 years old and 25 years or older, with 41.6% and 25.2%, respectively. Of the NHSDG females,

Table 52

Percent Attrition Among Male Accessions Within the Navy by Entry Age

FY 1978-FY 1980

Year	Total				HSDG				NHSDG			
1978	17	18-20	21-24	25+	17	18-20	21-24	25+	17	18-20	21-24	25+
3 mo.	11.5	9.7	10.5	11.7	6.9	8.4	9.8	11.0	14.5	14.6	15.8	16.7
12 mo.	17.3	13.5	15.1	17.7	10.8	11.7	14.0	16.6	21.6	20.5	23.6	26.7
24 mo.	26.0	18.4	20.4	24.4	15.9	15.9	19.0	23.0	32.8	27.9	30.8	35.2
30 mo.	29.4	20.5	22.4	26.8	17.8	17.8	20.8	25.1	37.1	31.1	34.5	40.0
Accessions	10,281	39,244	7,728	1,834	4,121	31,143	6,805	1,624	6,160	8,101	923	210
1979												
3 mo.	11.5	9.4	11.6	13.3	6.4	8.3	10.9	12.9	15.7	14.1	17.1	16.4
12 mo.	16.4	12.6	15.6	17.9	9.1	11.11	14.6	17.8	22.5	19.6	23.2	19.2
24 mo.	24.5	17.5	20.5	24.3	13.9	15.4	19.3	23.5	33.3	27.3	29.4	31.1
30 mo.	30.0	20.5	23.3	27.5	17.5	17.9	21.9	26.3	40.4	32.4	33.6	36.7
Accessions	8,523	36,187	6,772	1,601	3,863	29,726	5,977	1,424	4,660	6,461	795	177
1980												
3 mo.	9.1	7.5	9.6	13.6	4.9	6.7	9.1	12.8	12.1	11.2	12.0	18.4
12 mo.	14.0	11.2	13.5	18.4	8.0	9.9	12.8	17.2	18.3	17.0	17.4	25.9
24 mo.	26.6	18.4	20.3	24.5	14.7	15.7	19.0	23.0	35.1	29.8	27.0	34.0
30 mo.	30.8	20.5	22.5	26.0	15.9	17.3	20.8	24.3	41.4	34.5	31.2	36.8
Accessions	8,882	41,583	9,037	2,312	3,702	33,838	7,597	1,991	5,180	7,745	1,440	321

Table 53

Percent Attrition Among Female Accessions Within the Navy by Entry Age

FY 1978-FY 1980

Year	Total				HSDG				NHSDG			
1978	17	18-20	21-24	25+	17	18-20	21-24	25+	17	18-20	21-24	25+
3 mo.	12.4	11.5	10.4	11.8	9.5	10.5	9.2	10.4	17.2	18.6	20.7	22.7
12 mo.	17.8	17.1	16.9	18.9	14.8	15.7	15.6	17.6	22.9	27.5	29.3	29.6
24 mo.	24.7	23.2	22.8	24.5	19.7	21.7	21.0	23.4	33.1	34.1	39.7	34.1
30 mo.	28.8	25.8	25.2	26.0	23.9	24.2	23.2	25.0	37.0	37.4	43.1	34.1
Accessions	421	3,374	1,189	408	264	2,960	1,073	364	157	414	116	44
1979												
3 mo.	10.2	9.7	10.3	12.2	6.5	8.6	9.8	11.4	18.4	16.4	14.2	15.9
12 mo.	15.2	14.4	15.5	17.1	11.6	12.9	14.9	16.4	23.2	23.4	20.1	20.6
24 mo.	24.3	22.0	21.5	22.3	19.7	20.2	20.6	21.9	34.5	33.1	28.0	24.3
30 mo.	28.6	25.0	24.1	25.5	24.6	23.1	23.1	25.6	37.6	36.6	31.8	25.2
Accessions	738	5,214	1,961	650	509	4,486	1,722	543	229	726	239	107
1980												
3 mo.	9.7	8.0	7.7	9.5	7.3	7.4	7.5	8.8	14.9	13.2	9.2	13.9
12 mo.	15.3	13.1	12.1	13.4	12.0	12.2	11.8	12.9	22.7	20.3	14.1	16.5
24 mo.	25.4	21.9	19.4	19.3	20.0	20.6	18.9	18.4	37.6	31.7	22.9	24.4
30 mo.	27.5	24.4	22.6	21.8	21.2	23.0	22.0	21.2	41.6	35.2	26.1	25.2
Accessions	869	6,341	2,231	789	600	5,597	1,947	674	269	744	284	115

21-24 year old attrition was 26.1% at 30 months, and was significantly lower than that for 18-20 year olds by nearly 10%. HSDG females experienced a much lower rate of attrition that was between 21.2% and 23.0% for all age groups. HSDG females 18-20 and 21-24 years old had the highest rate with 23.0% and 22.0%, respectively. Although these two age groups were comparable at 3 months, the females 18-20 years old had assumed a higher level of attrition at 12 months. The lowest rate of attrition for all HSDG female age groups was represented by females 17 and 25 years or older.

Tables 54 and 55 present rates of attrition among male and female accessions within the Air Force for FY's 1978, 1979, and 1980. Among the NHSDG males, those 18-20 and 21-24 years old had comparable rates of attrition at 3 months, yet by 12 months, 18-20 year olds had established the higher rate of two entry age groups. By 30 months, 18-20 year old NHSDG male attrition was nearly 42.0% which was 10% higher than that of 21-24 year old NHSDG attrition. NHSDG males 25 years and older had the lowest attrition rate for the NHSDG males with 27.4% which represented a significant decrease from the FY 1978 30 month rate of 42.8%. Seventeen year old NHSDG males represented the highest percentage of attrites for NHSDG males through the first 30 months with nearly 52.0%. HSDG males deviated from the trend established by DOD, the Army, and the Navy in that

Table 54

Percent Attrition Among Male Accessions Within the Air Force by Entry Age

FY 1978-FY 1980

Year	Total				HSDG				NHSDG			
1978	17	18-20	21-24	25+	17	18-20	21-24	25+	17	18-20	21-24	25+
3 mo.	9.6	7.2	8.5	9.9	5.9	6.3	7.8	9.1	15.6	13.7	15.7	18.9
12 mo.	19.5	13.2	14.1	15.4	11.8	11.6	13.0	14.2	31.9	25.9	25.1	28.3
24 mo.	31.7	21.5	20.3	21.4	19.7	19.1	19.0	19.5	50.9	39.8	33.5	40.9
30 mo.	35.5	24.5	22.5	22.7	22.7	21.9	21.0	20.8	55.9	43.9	37.5	42.8
Accessions	6,654	36,769	9,371	1,807	4,095	32,456	8,525	1,648	2,559	4,313	846	159
1979												
3 mo.	8.8	5.9	7.4	10.6	4.9	5.1	6.8	10.2	14.4	11.3	12.3	14.5
12 mo.	19.6	12.5	13.4	16.0	10.8	10.7	12.1	15.0	32.1	25.1	24.0	26.8
24 mo.	31.7	20.3	19.3	20.0	19.1	17.6	17.5	18.5	49.6	38.6	34.6	36.6
30 mo.	36.0	23.5	21.5	21.6	22.8	20.7	19.5	20.0	54.7	42.8	37.8	38.4
Accessions	6,599	35,532	9,060	2,030	3,878	31,029	8,081	1,858	2,721	4,503	979	172
1980												
3 mo.	7.8	5.4	7.0	10.5	4.7	4.6	6.4	10.4	12.7	11.0	11.4	11.1
12 mo.	17.3	11.5	11.9	15.1	10.6	9.7	10.8	14.7	28.0	23.4	19.8	19.5
24 mo.	29.8	19.4	17.4	18.9	18.5	16.6	15.9	18.3	47.7	37.6	28.6	24.8
30 mo.	32.6	21.6	19.2	20.1	20.6	18.5	17.5	19.2	51.8	41.6	31.7	27.4
Accessions	5,998	39,929	10,325	2,260	3,685	34,602	9,100	2,034	2,313	5,327	1,225	226

Table 55

Percent Attrition Among Female Accessions Within the Air Force by Entry Age

FY 1978-FY 1980

Year	Total				HSDG				NHSDG			
1978	17	18-20	21-24	25+	17	18-20	21-24	25+	17	18-20	21-24	25+
3 mo.	13.9	9.0	8.8	8.5	9.7	8.4	7.8	7.6	23.5	14.1	15.2	14.5
12 mo.	23.8	16.2	15.1	14.7	16.9	15.0	13.2	12.7	39.9	25.6	27.7	26.8
24 mo.	33.7	25.7	22.5	20.5	25.5	24.0	19.9	18.8	52.7	39.0	39.9	31.2
30 mo.	37.8	29.4	25.8	23.3	29.4	27.5	23.2	21.2	57.3	44.6	43.2	36.2
Accessions	928	7,398	3,088	986	647	6,566	2,694	848	281	832	394	138
1979												
3 mo.	14.2	9.8	10.2	10.4	9.5	8.1	8.9	9.3	23.1	19.3	17.0	15.3
12 mo.	25.0	17.9	17.0	16.1	16.9	14.7	15.2	14.2	40.0	35.7	26.2	24.5
24 mo.	35.7	27.2	24.1	21.8	25.5	23.3	21.7	18.6	54.6	48.3	36.5	35.8
30 mo.	39.3	30.5	27.0	24.0	28.4	26.6	24.5	20.7	59.5	51.9	40.0	38.6
Accessions	1,054	7,346	3,532	1,333	686	6,216	2,960	1,084	368	1,130	572	249
1980												
3 mo.	13.1	9.0	8.6	9.7	8.2	8.0	7.7	8.9	22.6	15.6	13.7	14.4
12 mo.	24.9	16.9	15.1	15.9	15.8	14.8	13.4	14.7	42.5	29.9	24.0	23.0
24 mo.	36.3	27.0	22.3	22.0	24.4	24.4	20.0	20.4	59.2	43.4	35.4	31.6
30 mo.	38.3	29.9	25.1	24.2	26.6	27.2	22.5	22.3	60.8	47.3	39.5	35.3
Accessions	1,106	7,867	3,659	1,282	729	6,799	3,097	1,095	377	1,068	562	187

30 month rates of attrition do not monotonically increase with entry age. Of the FY 1980 accessions, nearly 21% of the 17 year old HSDG males had attrited at 30 months; HSDG males 25 years and older followed closely with 19.2% at 30 months. Although 21-24 year old HSDG males reflected a more accelerated attrition rate during the first 12 months than the 18-20 year olds, by 30 months, they had a lower cumulative rate of attrition than did the 18-20 year olds.

Air Force HSDG and NHSDG females accessed in FY 1980 displayed lower rates of attrition than those of DOD females. However, nearly 61.0% of the 17 year old NHSDG females had attrited by 30 months which was comparable to the DOD rate for NHSDG female attrition within the same age group. In comparing the 18-20 and 21-24 year old NHSDG females, the older age group had the lower rate of attrition at 30 months with 39.5%. Although the 18-20 year old NHSDG females did have a higher rate of attrition at 3 months than the 21-24 year old NHSDG females by 2.0%, the margin had accelerated to nearly 8.0% by 30 months. NHSDG females 25 years and older experienced the least attrition with 35.3%. For HSDG females, the 18-20 year olds had the highest attrition with 27.2% but exhibited much the same attrition behavior as the 17 year old HSDG females. HSDG females 21-24 years old and 25 years and older had comparable attrition at 24 and 30 months although

HSDG females 21-24 years old maintained a lower rate of attrition through the first 12 months.

Tables 56 and 57 present rates of attrition among male and female accessions within the Marine Corps for FY's 1978, 1979, and 1980. Nearly 60% of the NHSDG males accessed in FY 1980 had attrited by 30 months after maintaining significantly high rates of attrition throughout the time period. Although not nearly as high, NHSDG males 21-24 years old also had significant attrition at 30 months with 45.8%. Of this percentage, 28.1% had attrited within the first 3 months. NHSDG males 18-20 years old had a much lower rate of attrition with 37.7% which compared more favorably with that of NHSDG seventeen year olds with 39.7%. HSDG males 21-24 years old had an attrition rate of 30.1% at 30 months that was 10% higher than that of the 18-20 year old HSDG males. Seventeen year old HSDG males had the lowest rate of attrition overall with 17.6% while HSDG males 25 years and older represented a rate of attrition over two times that of the HSDG 17 year old males with 42.6%. Of this percentage, 28.2% had attrited within the first 3 months alone.

The small size of the Marine Corps HSDG female population in FY 1978, 1979 and 1980 precluded development of a NHSDG female entry age attrition profile. Of the HSDG females, nearly 42.0% of the 18-20 year olds had attrited at 30 months. Attrition at 30 months for HSDG females 21-24

Table 56

Percent Attrition Among Male Accessions Within the Marine Corps by Entry Age

FY 1978-FY 1980

Year	Total				HSDG				NHSDG			
1978	17	18-20	21-24	25+	17	18-20	21-24	25+	17	18-20	21-24	25+
3 mo.	11.5	10.3	18.2	23.4	6.5	8.6	16.5	22.1	14.8	15.7	25.6	29.1
12 mo.	17.0	14.6	25.0	32.0	10.7	12.4	23.2	30.5	21.1	21.6	33.6	38.2
24 mo.	24.9	20.6	32.0	38.3	15.7	17.8	30.2	36.4	31.0	29.9	40.4	46.4
30 mo.	28.6	23.1	34.5	42.0	18.4	20.1	32.6	40.3	35.2	32.6	42.9	49.1
Accessions	7,492	24,495	3,368	572	2,963	18,701	2,767	462	4,529	5,794	601	110
1979												
3 mo.	10.3	9.8	18.2	25.5	6.2	8.1	15.9	23.0	12.9	16.7	28.1	35.1
12 mo.	14.9	13.7	23.5	31.9	9.0	11.5	20.9	29.7	18.6	22.3	35.4	40.4
24 mo.	23.4	20.3	30.8	39.0	14.7	17.4	27.6	36.8	28.9	31.6	44.6	47.4
30 mo.	28.7	23.9	33.6	41.5	17.9	20.5	30.3	38.6	35.4	37.2	48.6	52.6
Accessions	7,494	25,269	3,201	549	2,888	20,093	2,614	435	4,606	5,176	587	114
1980												
3 mo.	11.3	10.5	19.2	29.2	6.8	9.3	17.3	28.2	14.9	16.4	28.1	34.2
12 mo.	15.4	13.9	24.0	36.6	9.5	12.4	21.7	34.9	20.2	21.2	34.2	44.2
24 mo.	25.6	20.9	30.6	43.5	15.7	18.3	28.2	40.6	33.7	32.8	41.6	56.7
30 mo.	29.8	23.2	32.9	45.6	17.6	20.0	30.1	42.6	39.7	37.7	45.8	59.2
Accessions	6,475	27,420	3,944	667	2,906	22,507	3,239	547	3,569	4,913	705	120

Table 57

Percent Attrition Among Female Accessions Within the Marine Corps by Entry Age

FY 1978-FY 1980

Year	Total				HSDG				NHSDG			
1978	17	18-20	21-24	25+	17	18-20	21-24	25+	17	18-20	21-24	25+
3 mo.	17.1	12.6	12.3	19.0	12.6	11.4	11.4	18.1	29.0	23.2	19.2	25.0
12 mo.	25.9	22.7	20.8	30.5	18.1	20.7	19.7	28.9	46.4	39.7	29.8	41.7
24 mo.	46.2	39.9	35.5	45.3	38.5	37.5	33.5	44.6	66.7	59.6	51.1	50.0
30 mo.	51.0	45.6	40.5	49.5	44.0	43.2	38.8	49.4	69.6	66.2	53.2	50.0
Accessions	251	1,438	408	95	182	1,287	361	83	69	151	47	12
1979												
3 mo.	11.6	16.5	20.1	20.3	11.8	16.2	20.3	19.2	8.3	30.6	14.3	100.0
12 mo.	18.0	24.1	26.3	24.1	17.2	23.9	26.2	23.1	33.3	33.3	28.6	100.0
24 mo.	31.8	37.9	37.9	35.5	30.8	37.8	37.7	34.6	50.0	38.9	42.9	100.0
30 mo.	36.5	43.3	42.4	38.0	35.8	43.3	42.4	37.2	50.0	41.7	42.9	100.0
Accessions	233	1,466	354	79	221	1,430	340	78	12	36	14	1
1980												
3 mo.	10.1	15.3	15.8	11.4	10.1	15.3	16.0	11.5	0.0	22.2	0.0	0.0
12 mo.	17.2	24.0	23.8	21.0	17.3	23.9	23.9	20.2	0.0	33.3	20.0	100.0
24 mo.	28.9	38.9	36.9	33.3	29.1	39.0	36.8	32.7	0.0	33.3	40.0	100.0
30 mo.	31.4	41.8	38.5	37.2	31.7	41.9	38.5	36.5	0.0	33.3	40.0	100.0
Accessions	239	1,490	361	105	237	1,481	356	104	2	9	5	1

years old was also comparably high at 38.5%. HSDG females seventeen years old and 25 years and older followed closely with attrition rates of 36.5% and 31.7% respectively.

VI. MARITAL STATUS

A. MARITAL PROFILE OF THE MILITARY

Prior to the Fall of 1979 when the Defense Enrollment Eligibility Reporting System (DEERS) was instituted as a means of establishing eligibility for dependent health care of CHAMPUS, collecting and validating data concerning marital or dependency status of military members proved to be a significant problem. Although DEERS has helped the branches to validate dependency data through the use of FORM 1172, a data base still does not exist that will provide a complete marital profile of the military and its members. Validation of military members who are married to each other still eludes both DEERS and the traditional military personnel system. Present data cannot be further stratified by non-prior service and prior service members.

Traditionally, any discussion of marital status was relegated to date of entry where older accessions reflected a higher proportion who were married. This chapter will discuss the marital trends of male and female members through stratification of marital status data by length of service and entry age.

For the purposes of this analysis, the DMDC Master File was utilized. This file does not differentiate between

non-prior service and prior service entrants nor military members who are married to each other.

1. DOD Trends

Table 58 presents the DOD LOS distribution of married members by entry age and sex as of September 1983. Of the females at entry, 9.0% of the 18-20 year olds were married while 21-24 year olds reflected a proportion twice as large with nearly 19.0%. Yet, between 4 and 5 years LOS both entry age groups reflected parity in terms of marital status. Even though less than 4.0% of the 17 year olds were married at entry, by the 4th year LOS this age group had the same proportions who were married as the age groups 25 years and older with nearly 55%. By the 7th through 10th year LOS, the proportion of 17 year old females who were married exceeded that for females 25 years and older as well as the other two entry age groups.

Similarly, males 18-20 and 21-24 years old achieve parity in marital status between the 6th and 7th year LOS with 77.1% and 79.1% respectively. Nearly 29.0% the 21-24 year olds had been married at entry, whereas only 10.1% of the 18-20 year olds had reflected this status thereby representing a much more accelerated rate of marriage for the latter entry age group. By the 7th year LOS, 17 year old males had achieved marital parity with males 25 years and older with nearly 79% although less than 4% of the 17 year olds had been married at time of entry.

Table 58

DOD LOS Distribution of Married Members by Entry Age and Sex in %

as of September 1983

	Male					Female				
LOS	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
<1 yr	3.7	10.1	28.8	43.4	237,951	3.5	9.0	18.8	31.1	30,475
1 yr	10.7	18.3	37.4	49.8	225,724	17.7	25.6	33.3	40.9	26,842
2 yr	19.2	26.7	43.4	54.0	212,294	36.3	39.5	44.6	45.9	28,062
3 yr	32.2	37.7	52.6	60.9	159,454	47.5	49.3	52.5	51.7	24,922
4 yr	47.7	53.0	63.9	69.1	104,945	54.7	55.5	56.8	54.6	15,956
5 yr	60.2	62.3	68.9	73.0	95,930	56.8	59.9	60.5	57.7	12,078
6 yr	71.6	71.4	75.0	76.0	79,820	66.1	62.0	60.6	58.8	7,200
7 yr	78.6	77.1	79.1	79.4	60,615	67.4	63.4	61.6	56.6	5,724
8 yr	79.4	81.0	82.8	82.8	49,630	57.8	63.3	61.7	54.3	4,638
9 yr	84.7	83.6	84.5	84.4	45,085	65,8	62.4	60.9	52.1	4,255
10 yr	85.3	85.3	84.5	85.3	42,307	100.0	61.4	60.0	48.1	2,743

By the 10th year LOS, all male entry age groups had the same married proportions with 85%.

2. Branch Trends

Table 59 presents the Army LOS distribution of married members by entry age and sex as of September 1983. Less than 9.0% of the females 18-20 years old and 22.3% of the females 21-24 years old were married at entry but by the 5th year LOS, both entry age groups reflected the same proportion of married members with 60.8%. The 18-20 year old females had a higher proportion of members who were married by 10 years LOS than did the 21-24 year old females. Less than 4.0% of the 17 year old females were married at entry yet between the 3rd and 4th years LOS, this age group exceeded the proportion of married females 25 years and older, and continued to do so through 10 years LOS.

Of the male entrants, nearly 11.0% of the 18-20 year olds and 32.2% of the 21-24 year olds were married. Although these two age groups did not reflect like proportions of married members until the 10th year LOS, parity was achieved between the 6th and 7th years LOS with 80.3% aid 83.1% respectively. By the 9th year LOS, males 17 and 25 years or older reflected the same proportions of married members with 87.1% and 86.8% respectively. However, 50.1% of the males 25 years and older were married at entry

Table 59

Army LOS Distribution of Married Members by Entry Age and Sex in %

as of September 1983

	Male					Female				
LOS	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
<1 yr	4.1	10.5	32.2	50.1	102,254	3.5	8.8	22.3	38.4	13,484
1 yr	11.2	17.2	38.9	55.2	85,544	13.7	21.4	34.3	46.1	11,049
2 yr	18.9	25.5	46.0	59.3	72,655	32.0	34.1	45.6	49.9	11,316
3 yr	35.4	40.7	57.3	66.7	51,774	41.7	45.6	52.1	54.3	8,793
4 yr	49.9	56.9	68.5	73.6	37,335	54.6	53.7	56.1	52.7	5,643
5 yr	62.6	64.5	72.8	77.5	35,624	60.1	60.8	60.8	58.8	4,697
6 yr	74.8	73.2	78.1	79.3	32,060	66.2	59.7	62.7	58.2	2,523
7 yr	81.5	80.3	83.1	83.6	24,704	75.0	64.7	63.0	57.3	2,152
8 yr	81.2	83.6	85.5	86.5	19,369	0.0	64.9	62.7	61.0	1,523
9 yr	87.1	86.1	88.0	86.8	17,869	60.0	64.5	63.5	56.9	1,639
10 yr	88.3	88.1	87.5	89.3	16,075	100.0	62.4	55.0	46.7	785

as compared to only 4.1% for the 17 year old males. By the 4th year LOS, 49.9% of the 17 year olds were married.

Table 60 presents the Navy LOS distribution of married members by entry age and sex as of September 1983. Nearly 13.0% of the females 21-24 years old and 6.1% of the females 18-20 were married at entry. Although both had similar proportions of married members by the 4th year LOS, 18-20 year old females had increased their entry age proportions of married members by nearly four times by the end of the first year LOS. Seventeen year old females had exceeded the proportion of married members 25 years and older by the third year LOS and continued this upward trend of marriage throughout the 10 years LOS.

By the 9th year LOS, 79.0% of the males 18-20 and 21-24 years old were married but had displayed similar proportions as early as the 5th year LOS where nearly 54.0% of the 18-20 year olds and nearly 59.0% of the 21-24 year olds were married. Between the 6th and 7th years LOS, 17 year old males had exceeded the proportion of married members 25 years and older by 2.1%. By the 10th year LOS, nearly 82% of the 17 year old males were married which was the highest proportion of all male entry age groups.

Table 61 presents the Air Force LOS distribution of married members by entry age and sex as of September 1983. By the second year LOS, females 18-20 and 21-24 years old had the same proportions of married members with 51.8%

Table 60

Navy LOS Distribution of Married Members by Entry Age and Sex in %

as of September 1983

	Male					Female				
LOS	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
<1 yr	3.2	7.0	18.0	30.1	59,053	4.0	6.1	12.5	18.4	7,418
1 yr	9.5	14.9	29.4	40.3	60,934	16.4	22.4	27.0	30.9	6,883
2 yr	16.7	21.8	33.9	45.0	60,769	31.2	32.5	34.7	34.8	7,358
3 yr	28.2	30.4	41.6	49.7	48,297	39.3	39.3	41.6	36.1	6,571
4 yr	41.1	44.2	53.7	59.6	31,744	45.9	44.2	45.8	38.6	3,876
5 yr	53.4	53.9	58.6	63.7	28,897	32.8	45.0	43.8	41.1	2,065
6 yr	64.7	64.7	67.6	67.3	22,057	52.6	50.1	42.7	47.3	1,352
7 yr	73.1	70.2	70.8	71.0	15,813	40.0	48.4	44.7	37.4	1,025
8 yr	75.8	75.3	78.9	76.1	13,405	48.6	48.9	46.2	29.9	922
9 yr	81.6	78.7	79.0	78.8	11,077	50.0	46.4	37.2	24.3	802
10 yr	81.8	80.9	80.1	76.8	10,548	--	45.4	50.7	31.6	667

Table 61

Air Force LOS Distribution of Married Members by Entry Age and Sex in %

as of September 1983

	Male					Female				
LOS	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
<1 yr	5.1	15.6	36.3	47.0	46,709	4.0	12.3	20.0	28.4	7,863
1 yr	14.3	26.2	45.3	54.8	50,494	27.1	32.6	37.2	42.4	7,160
2 yr	27.2	36.6	51.9	58.3	51,136	47.6	51.8	51.4	56.3	7,873
3 yr	37.8	46.8	60.3	65.9	38,951	60.1	59.9	59.8	62.8	8,508
4 yr	54.1	59.7	69.9	75.1	26,018	63.8	64.8	64.0	68.0	5,749
5 yr	65.1	70.0	75.7	79.1	22,927	63.3	65.5	67.4	66.5	4,773
6 yr	73.9	76.2	79.5	81.0	18,621	70.6	68.9	67.0	66.0	3,026
7 yr	79.1	79.7	82.2	83.3	14,952	74.8	68.7	67.6	65.6	2,375
8 yr	81.4	83.0	84.0	85.8	12,492	60.9	68.6	67.8	63.7	2,065
9 yr	85.1	84.4	85.4	87.4	12,781	76.2	68.3	68.8	60.8	1,739
10 yr	85.9	85.4	84.2	88.8	12,760	--	70.2	67.8	63.2	1,228

and 51.4% respectively. However only 12.3% of the 18-20 year old females had been married at entry as compared to the 21-24 year old proportion of 20.0%. By the 3rd year LOS, 60.1% of the 17 year old females are married which compares favorably with the nearly 63.0% of the females 25 years and older who are also married at 3 years LOS. However only 4.0% of the 17 year old females had been married at entry as compared to 28.4% for those 25 years and older. By the 9th year LOS, 18-20 and 21-24 year old females had comparative proportions of married members with 68.3% and 68.8% respectively. In contrast, 76.2% of the 17 year old females and nearly 61.0% of those 25 years and older were married.

Of the males nearly 16.0% of the 18-20 year olds and 36.3% of the males 21-24 years old were married at entry. By the 7th year LOS, these two age groups had comparable proportions of married members with 79.7% and 82.2% respectively. Of the males 25 years and older, 47.0% were married at entry yet that proportion had climbed to nearly 89.0%. In contrast, 17 year old males entered the Air Force with only 5.1% who were married and by the 10th year had raised that proportion to nearly 86.0%.

Table 62 presents the Marine Corps LOS distribution of married members by entry age and sex as of September 1983. Marine Corps females display low proportions of married members at time of entry. However 55.2% of the females

Table 62

Marine Corps LOS Distribution of Married Members by Entry Age and Sex in %

as of September 1983

	Male					Female				
LOS	17	18-20	21-24	25+	Total	17	18-20	21-24	25+	Total
<1 yr	2.7	6.8	20.5	34.9	29,935	0.8	7.0	10.9	15.4	1,710
1 yr	9.6	14.1	32.2	41.1	28,752	18.4	31.6	35.9	39.7	1,750
2 yr	17.1	21.6	36.4	48.0	27,734	40.4	43.5	50.7	50.0	1,515
3 yr	27.0	30.6	45.4	51.5	20,432	47.1	55.2	55.7	42.4	1,050
4 yr	47.7	49.2	58.3	61.0	9,848	45.6	58.3	62.0	48.6	688
5 yr	61.8	60.8	66.9	68.9	8,482	56.9	59.2	55.2	57.2	543
6 yr	71.7	70.5	71.2	81.6	7,082	74.0	62.1	60.9	64.0	299
7 yr	77.8	74.7	77.3	73.2	5,146	60.0	62.9	57.6	62.5	172
8 yr	79.7	80.1	80.1	75.3	4,364	66.7	57.0	64.8	38.5	128
9 yr	84.0	83.0	81.2	79.3	3,358	--	57.5	55.0	42.9	75
10 yr	83.2	85.7	85.3	84.9	2,924	--	49.0	66.7	25.0	63

18-20 years old and 55.7% of the females 21-24 years old were married by the third year LOS. Also in that year 17 year old females exceeded females 25 years and older in the proportion of married members by nearly 5%. At time of entry, only .8% of the 17 year old females were married but by the 4th year LOS, that proportion had increased to 47.1%.

Of the males, nearly 7.0% of the 18-20 year olds and nearly 21.0% of the 21-24 year olds were married at entry yet by the 6th year LOS, 70.5% of the 18-20 year olds and 71.2% of the 21-24 year olds were married. By the 8th year LOS, both entry age groups reflect a married proportion of 80.1%. By the 7th year LOS, 17 year old males exceeded the males 25 years and older in the proportion of married members with 77.8% and 73.2% respectively.

VII. COSTS AND BENEFITS OF THE OLDER AGE ACCESSION

A. SUMMARY

This study has examined the differences in enlistment behavior between four entry age groups on active duty between FY 1973 and FY 1983 in an effort to establish an enlistment profile of older age accessions. Entry age groups established for this study were 17, 18-20, 21-24, and 25 years and older; these four entry age groups were further stratified by branch and sex to control for the effects of these two variables. In order to analyze potential costs and benefits which might be attributed to the older age accessions, this study examined current entry age trends, accession quality, utilization, attrition, and marital status. All data utilized was from the Active Duty Enlisted Cohort and Master Files maintained by DMDC, Monterey.

Analysis of data indicates the average entry age of entrants has been steadily increasing for all years of the AVF. This increase in entry age has been occurring even though from FY 1973 through FY 1979 the size of the "usual" entry age pool (17-20) was increasing relative to accession levels. In terms of accession quality, older age accessions have higher levels of education and mental ability when

compared to younger accessions, as well as a greater proportion who qualify for advanced placement.

A greater proportion of older accessions are classified within the functional support, administrative, and non-occupational (student) areas and indicate a tendency towards four year enlistments rather than six. At 30 months, older HSDG male accessions reflect higher cumulative rates of attrition than younger HSDG males accessions, while older NHSDG male accessions reflect a lower cumulative rate of attrition than younger HSDG male accessions, while older NHSDG male accessions reflect a lower cumulative rate of attrition than their younger NHSDG males. At 30 months, older HSDG female accessions reflect comparable cumulative rates of attrition to that of younger HSDG female accessions. Whereas, older NHSDG females reflect a 30 month cumulative rate of attrition much lower than that of the younger NHSDG females.

Although older accessions represent a higher married proportion at entry than younger accessions, within 5 to 7 years of length of service all entry age groups have similar proportions married. Younger accessions therefore have accelerated rates of marriage (compared to older accessions) during the first term of service.

This study, while not exhaustive, provides a substantial base of information from which an initial assessment of costs and benefits can be attempted. This study

suggests the costs attributed to the expanded accession of older age individuals include attrition, marital/dependency status, and recruiting/compensation costs. Benefits include higher levels of education and mental ability and a greater propensity for advanced placement. These issues will be discussed below.

B. COSTS OF THE OLDER AGE ACCESSION

1. Attrition

Attrition of older age accessions has been reported as surprisingly high in view of the assumption that maturity would be an effective pre-determinant of an individual's ability to accept the rigors of military life. Yet attrition is a complex issue involving the interaction of personal and organizational variables.

A recent summary has criticized military attrition research in that it: has placed relatively more emphasis on reenlistment than pre-EAOS attrition; has placed relatively more emphasis on individual variables (e.g. education, mental grade) than on organizational variables; has infrequently analyzed the possible joint or interactive contribution to attrition of individual and organizational variables [Ref. 12]. Attrition during, or immediately following, assignment to the first duty station indicated attraction to work group and proficiency of work group were powerful indicators of an individual's propensity towards failure in completing a first term [Ref. 13].

In the case of older age accessions, these factors could be even more significant in predicting attrition since the older accessant is currently not the norm within the military. In a military that reconstitutes itself every five years with a majority of individuals who are between the ages of 17 and 21, the older individual may find it difficult to find the career stability that he or she desires. Therefore the high attrition that is reflected by older age accessions may be indicative of a response to a system that does not allow full expression of inherent qualities and attributes rather than an "inability to cope." In addition, undesired attrition can be viewed as a failure in the selection and classification activities of the military personnel system.

2. Marital/Dependency Status

It has been traditionally purported that older accessions are not as desirable as younger, single recruits because of the medical and personnel costs associated with married members. Indeed one branch, the Navy, seems to be so pessimistic about the difficulties that enlistees with dependents have that married persons are not encouraged to enlist unless they are "particularly desirable." Although what is "particularly desirable" remains unclear in terms of specific recruiting requirements, reenlistment policy concerning dependency status is very specific: Servicemen in the first three paygrades cannot reenlist if

they have more than 2 dependents [Ref. 14]. While all branches do not have a reenlistment policy such as this, there is no doubt the present attitude in the military is one of bias towards the young, "unencumbered" enlistee.

This thesis indicates that younger accessions reflect an accelerated propensity towards marriage during the first four years. By the fifth year of service, younger accessions are experiencing married proportions comparable to that for older accessions. For different entry age groups, cost differences associated with marital status have essentially disappeared by the fifth year of service.

3. Recruiting/Compensation Costs

A recent technical report prepared for the Navy Recruiting Command and the Office of Naval Research suggests more active recruiting of older accessions could be an expensive policy change [Ref. 15]. The increased role of the recruiters for the signing of Upper Mental HSDG Contracts seems to be much more effective than reliance on the formal lead generation process (advertisements, classified ads). Not including bonuses, the marginal cost of recruiting male high school graduates capable of scoring average or above on standardized entrance tests has been estimated to range from $870 a recruit for the Air Force to $3,700 a recruit for the Army in fiscal year 1977 compared to $150 for the marginal cost of recruiting a low-quality male [Ref. 16].

Unfortunately these marginal costs were not calculated separately for various entry age groups. A determination of the relative recruiting costs of an additional high quality recruit by entry age is needed to assess the recruiting cost effect of a targeting of older age high quality recruits. The relative prevalence of high quality recruits among older accessions implies that the marginal recruiting cost for an additional older entry age high quality recruit may very well be substantially less than that for an additional younger age high quality recruit. As population demographics shift in the coming decades, the relative costs attributed to recruiting older age accessions will decrease as the recruiting pool of individuals 21 years and older increases.

While qualitative substitution is difficult to attempt in view of the lack of valid productivity measurements for each of the branches, it has become increasingly acceptable within the private sector to trade increased quality for quantity in an effort to reduce costs. While there are many jobs within the military where a one-on-one relationship must be maintained, there are many more jobs which could be fulfilled with less people who are more highly qualified. Accession quality analysis indicates older age recruits are generally of higher quality than younger age accessions.

In view of these issues, the older age accession should not simply be construed as a more costly investment than the younger age accession.

C. BENEFITS OF THE OLDER AGE ACCESSION

1. Higher Levels of Education and Mental Ability

Traditionally, DOD has used three criteria for gauging its "success" in manning the force. The first and most fundamental measure is the achievement of manpower strength objectives. The second and third "criteria of success" are measures of the "quality" of new recruits: enlistment test scores and level of education [Ref. 17]. As the level of education achieved and mental ability increase with age, the older age accession becomes a prime recruiting source for both.

The benefits of better educated recruits with increased mental ability are many but the most obvious include decreased training costs and an increased ability to function in a rapidly expanding technological force which emphasizes sophisticated weaponry and increased responsibility. Equally important is the fact that education levels and AFQT scores form effective predictors of attrition during the first term. Therefore higher quality recruits can form an effective buffer against the drain of first-term personnel while providing a potential source of highly qualified, mid-grade technicians and supervisors.

2. Advanced Placement

As the military continues to experience mid-grade shortages, advanced placement becomes, literally, a promotional "spring-board" that circumvents the more traditional, but time consuming promotion path. Although all services have increased the proportion of advanced placement to E-2 with younger accessions, advanced placement in significant proportions to E-3 and above has been confined to accessions 21 years and older. These accessions have proven themselves to be qualified in terms of both educational achievement and mental ability in addition to possessing the requisite maturity that is a necessity with increased levels of responsibility.

In view of the present skill shortages--some of which remain critical--advanced placement is an effective management tool that relies heavily on the older age accession. Advanced placement is, in turn, an appealing option to the older individual who very often has already made an initial career decision that entailed starting at the bottom of the promotional ladder.

The expanded use of advanced placement would, by its very nature, promote the development of a two track career system that delineates between the career number and the "citizen soldier" who enlists for an abbreviated period of time [Ref. 18]. This concept, while not new, has gained in prominence as a viable option to the traditional

promotional system that has become a costly burden to the military in view of increased training requirements and mid-grade skill shortages.

While adherence to a system based on rank does not in itself necessarily contribute to the Armed Forces' very heavy dependence on young personnel, in combination with the closed nature of the military system, pre-determined promotion opportunities do strongly influence the average age of service personnel [Ref. 19]. This traditional orientation towards youth will have serious implications for military recruiting efforts in light of the shrinking recruiting pool, yet future problems could be alleviated through personnel policy changes that target older age accessions.

D. AREAS FOR FURTHER STUDY

The findings of this study indicate further analysis is required with respect to the feasibility of targeting older age accessions. Multiple Classification Analysis of the variables presented in this study would provide further clarification while controlling for certain variables which may have contaminated the present form of data. For example, the area of attrition should be more closely analyzed by controlling for such variables as marital status, occupational area, and term of enlistment. Such analysis would provide a much more definitive statement on older

age attrition than is presented in this study and would therefore provide a better understanding of the organizational and personal determinants of older age attrition.

The career intentions of older age accessions must also be studied to gain a better understanding of the issues impacting upon the reenlistment decision. This thesis indicates very different trends in entry age occupational assignment and terms of enlistments which would definitely impact upon any career decision. The appropriate marginal costs and benefits must be estimated to determine the degree of trade-off among entry age groups that would be cost effective. This thesis indicates that in all likelihood the expansion of older age accession would be cost effective.

While establishment of physical standards for certain occupations has been initiated, standardization between the services of these standards has not. The relationship between medical examination results and the physical requirements associated with specific jobs has varied by service [Ref. 20]. Due to the higher proportion of older age individuals who are medically disqualified from the enlistment process, present physical and psychiatric enlistment standards should be reviewed for validity within the context of a changing military environment.

In this study only that group of individuals who have actually entered military service was examined. Two

other groups that would provide additional sources of information would be (1) those individuals who are eligible for military service but who have decided against enlistment, and (2) those who are interested but have not pursued the qualification process leading to enlistment.

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APPENDIX A

ENLISTED OCCUPATIONAL AREAS, GROUPS, AND SUBGROUPS

0 Infantry, Gun Crews, and Seamanship Specialists

- 01 Infantry

    - 010 Infantry, General
    - 011 Special Forces
    - 012 Military Training Instructor

- 02 Armor and Amphibious

    - 020 Armor and Amphibious, General

- 03 Combat Engineering

    - 030 Combat Engineering, General

- 04 Artillery/Gunnery, Rockets, and Missiles

    - 041 Artillery and Gunnery
    - 042 Rocket Artillery
    - 043 Missile Artillery, Operating Crew

- 05 Air Crew

    - 050 Air Crew, General
    - 051 Pilots and Navigators

- 06 Seamanship

    - 060 Boatswains
    - 061 Navigators
    - 062 Small Boat Operators
    - 063 Seamanship, General

- 07 Installation Security

    - 070 Security Guards

1 Electronic Equipment Repairmen

- 10 Radio/Radar

    - 100 Radio/Radar, General
    - 101 Communications Radio

  - 102 Navigation, Communication and Countermeasure, N.E.C.
  - 103 Air Traffic Control Radar
  - 104 Surveillance/Target Acquisition and Tracking Radar

- 11 Fire Control Electronic Systems (Non-Missile)

  - 111 Bomb-Navigation
  - 112 Airborne Fire Control
  - 113 Shipboard and Other Fire Control

- 12 Missile Guidance, Control and Checkout

  - 121 Missile Guidance and Control
  - 122 Missile Checkout Equipment, Test Equipment, and Calibration
  - 123 Torpedo

- 13 Sonar Equipment

  - 130 Sonar, General

- 14 Nuclear Wespons Equipment

  - 140 Nuclear Weapons Equipment Repair, General

- 15 ADP Computers

  - 150 ADP Computers, General

- 16 Teletype and Cryptographic Equipment

  - 160 Teletype and Cryptographic Equipment, General

- 19 Other Electronic Equipment

  - 191 Training Devices
  - 193 Shipboard Inertial Navigation Systems
  - 198 Electronic Instruments, N.E.C.

2 Communications and Intelligence Specialists

- 20 Radio and Radio Code

  - 201 Radio Code
  - 202 Non-Code Radio
  - 203 Non-Radio Communications (Visual)

- 21 Sonar

  - 210 Sonar Operator, General

  - 22 Radar and Air Traffic Control
    - 221 Radar
    - 222 Air Traffic Control
  - 23 Signal Intelligence/Electronic Warfare
    - 230 Signal Intelligence/Electronic Warfare, General
    - 231 Intercept (Code and Non-Code)
    - 232 Analysis
    - 233 Electronic Countermeasures
  - 24 Intelligence
    - 241 Language Interrogation/Interpretation
    - 242 Image Interpretation
    - 243 Operational Intelligence
    - 244 Counterintelligence
  - 25 Combat Operations Control
    - 250 Combat Operations Control, General
  - 26 Communications Center Operations
    - 260 Communications Center Operations, General
- 3 Medical and Dental Specialists
  - 30 Medical Care
    - 300 Medical Care and Treatment, General
    - 301 Operating Room
    - 302 Mental Care
    - 303 Therapy
    - 304 Orthopedic
  - 31 Technical Medical Services
    - 311 Laboratory
    - 312 Pharmacy
    - 313 Radiology
  - 32 Related Medical Services
    - 321 Food Inspection and Veterinary Services
    - 322 Preventive Medical Services
  - 33 Dental Care
    - 330 Dental Care, General
    - 331 Dental Laboratory

4 Other Technical and Allied Specialists

40 Photography

400 Photography, General

41 Mapping, Surveying, Drafting, and Illustrating

411 Mapping
412 Surveying
413 Drafting
414 Illustrating

42 Weather

420 Weather, General

43 Ordnance Disposal and Diving

431 EOD/UDT
433 Diver

45 Musicians

450 Musicians, General

49 Technical Specialists, N.E.C.

491 Physical Science Laboratory
492 Memorial Activities and Embalming
493 Safety
494 Nuclear, Biological and Chemical Warfare Specialists
495 Firefighting and Damage Control
496 Other Technical Specialists and Assistants

5 Functional Support and Administration

50 Personnel

500 Personnel, General
501 Recruiting and Counseling

51 Administration

510 Administration, General
511 Stenography
512 Legal
513 Medical

52 Clerical/Personnel

520 Combined Personnel and Administration, General
521 First Sergeants and Sergeants Major

53 Data Processing

531 Operators/Analysts
532 Programmers

54 Accounting, Finance and Disbursing

541 Auditing and Accounting
542 Disbursing

55 Other Functional Support

551 Supply Administration
552 Unit Supply
553 Transportation
554 Postal
555 Aviation Maintenance Records and Reports
556 Flight Operations
557 Production and Quality Control
558 Functional Analsysis

56 Religious, Morale and Welfare

561 Chaplain's Assistants
562 Recreation and Welfare

57 Information and Education

570 Information and Education, General

6 Electrical/Mechanical Equipment Repairmen

60 Aircraft and Aircraft Related

600 Aircraft, General
601 Aircraft Engineers
602 Aircraft Accessories
603 Aircraft Structures
604 Aircraft Launch Equipment

61 Automotive

610 Automotive, General
611 Track Vehicle
612 Construction Equipment

- 62 Wire Communications
  - 620 Wire Communications, General
  - 621 Linemen
  - 622 Central Office
  - 623 Interior Communications

- 63 Missile Mechanical and Electrical
  - 631 Missile Engine
  - 632 Missile Mechanic
  - 633 Missile Launch and Support Facilities

- 64 Armament and Munitions
  - 640 Armament Maintenance, General
  - 641 Small Arms Repair
  - 642 Artillery Repair
  - 643 Turret Repair
  - 644 Nuclear Weapons Maintenance and Assembly
  - 645 Ammunition Repair
  - 646 Aviation Ordnance
  - 647 Mines and Degaussing

- 65 Shipboard Propulsion
  - 651 Main Propulsion
  - 652 Auxiliaries

- 66 Power Generating Equipment
  - 661 Nuclear Power
  - 662 Electric Power

- 67 Precision Equipment
  - 670 Precision Equipment, General

- 69 Other Mechanical and Electrical Equipment
  - 690 Other Mechanical and Electrical Equipment, General

- 7 Craftsmen
  - 70 Metalworking
    - 700 Metalworking, General
    - 701 Welding
    - 702 Machinist
    - 703 Sheetmetal
    - 704 Metal Body Repair

- 71 Construction
    - 710 Construction, General
    - 711 Steelworking
    - 712 Woodworking
    - 713 Construction Equipment Operation
- 72 Utilities
    - 720 Utilities, General
    - 721 Electrician
- 74 Lithography
    - 740 Lithography, General
- 75 Industrial Gas and Fuel Production
    - 750 Industrial Gas and Fuel Production, General
- 76 Fabric, Leather, and Rubber
    - 760 Fabric, Leather, and Rubber, General
- 79 Other Craftsmen, N.E.C.
    - 790 Other Craftsmen, N.E.C., General

8 Service and Supply Handlers

- 80 Food Service
    - 800 Food Service General
    - 801 Stewards and Enlisted Aides
- 81 Motor Transport
    - 811 Motor Vehicle Operators
    - 812 Railway Operators
- 82 Material Receipt, Storage and Issue
    - 821 Missile Fuel and Petroleum
    - 822 Warehousing and Equipment Handling
    - 823 Sales Store
- 83 Law Enforcement
    - 830 Law Enforcement, General
    - 831 Corrections
    - 832 Investigations

- 84 Personal Service
  - 840 Laundry and Personal Service, General
- 85 Auxiliary Labor
  - 850 Auxiliary Labor, General
- 86 Forward Area Equipment Support
  - 860 Forward Area Equipment Support, General
- 87 Other Services, N.E.C.
  - 870 Other Services, General

9 Non-Occupational

- 90 Patients and Prisoners
  - 901 Patients
  - 902 Prisoners
- 91 Officer Candidates and Students
  - 911 Cadets and Other Officer Candidates
  - 912 Students
- 92 Undesignated Occupations
  - 920 Undesignated Occupations, General
- 95 Not Occupationally Qualified
  - 950 Not Occupationally Qualified, General

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